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"For many fortunate discoveries in medicine, and for the detection of numerous "errors, the world is indebted to the rapid circulation of Monthly Journals; "and there never existed any work to which the Faculty in EUROPE and "AMERICA were under deeper obligations than to the Medical and Physical "Journal of London, now forming a long, but an invaluable, series." RUSH.

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FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

An Essay on Genius and its Diseases. By THOMAS MIDDLETON STUART, A.M.; being his Inaugural Thesis for the Degree of Doctor in Medicine, sustained at the University of New-York.

MAN is so constituted, that what is generally esteemed his greatest blessing may become his greatest curse. He has no endowment of body or of mind, which may not prove destructive of his happiness. Strength, beauty, wit, all that can render life desirable or useful, often, through the frailty of human nature, become sources of misery. We may then with propriety, in the following essay, whilst we attempt to speak of genius, treat also of some of the diseases to which its possessors seem peculiarly liable.

Before entering directly upon this subject, we beg leave to premise a few things. The diseases of genius have their seat sometimes in the mind, sometimes in the body, and often affect both body and mind. In treating of these, we may speak of the mind acting upon the body and disordering its functions, and of the body disordering the faculties of the mind: in doing so, many expressions in regard to the mind, through the poverty of language and the imperfection of knowledge, may be used, which are strictly applicable only to what is material. But we utterly disclaim any sentiment favourable to the doctrine of the materiality of the mind, though a Priestley has graced it with his approbation. It would be too distant from our purpose here to attempt a regular refutation of this doctrine, and concerning it we would only observe, that, if the mind be material, it must form a part of the body or the whole body; in other words, every part of the body together must form the mind, or some particular part must form it,—as the brain, or heart, &c.; for, if this be not allowed, the immateriality of the mind must be

allowed. The first supposition, viz. that every part of the body together forms the mind, needs no refutation; the second, that some particular part forms it, has more plausibility, but as little truth. We will only notice what Priestley says in favour of the brain and mind being one and the same; for, if it were reasonable to fix on any part of the body as the mind, that part ought to be the brain. Priestley is persuaded of the truth of his doctrine, "because," as he says, "as far as we can judge, the faculty of thinking, and a certain state of the brain, always accompany and correspond to one another." And again, "there is no instance of any man retaining the faculty of thinking, when his brain was destroyed. Moreover, as the faculty of thinking in general ripens and comes to maturity with the body, it is also observed to decay with it; and, if in some cases the mental faculties continue vigorous when the body in general is enfeebled, it is evidently because, in those particular cases, the brain is not much affected by the general cause of weakness. Likewise, as the mind is affected in consequence of the affections of the body and brain, so the body is liable to be reciprocally affected by the affections of the mind, as is evident in the visible effects of all strong passions. These are certain irrefragable arguments, that it is no other than one and the same thing that is subject to these affections."

In answer to these irrefragable arguments, we oppose *facts* to *assertions*. "The history of dissections proves that the texture of every part of the brain may be morbidly altered from its natural state, and yet all the faculties of the mind remain entire." To this the writings of Morgagni, Bonetus, and Haller, bear testimony.* "Portions of the brain have been forcibly detached; excavations have been formed in it by abscesses; fungous tumors have arisen from its surface; all its arteries have been ossified; its coats have been variously diseased; the interior part of the cerebrum and of the cerebellum, the basis of the cerebrum, the pituitary gland, the pineal gland, the plexus choroides, have all been found exhibiting morbid changes of structure, in people who were in full possession of their internal senses."† Instances occurred in Dr. Hunter's dissecting-room, where the brain was found almost entirely converted into pus, and yet the persons in whom the brain was thus found diseased had suffered no mental derangement.‡ How then stands the assertion, that "there is no instance of any man retaining the faculty of thinking, when his brain was destroyed?" When the body is affected with palsy, and yet the faculties of the mind

* See Morgagni *de Causis et Sedibus*, Epist. xi. xv. xx. and the first volume of the *Memoirs of the Literary and Philosophical Society of Manchester*.

† Crichton on *Mental Derangement*, vol. i. p. 241.

‡ Fordyce on *Fevers*, vol. ii. p. 102.

remain entire, and when, on examination after death, disorder of the brain is discovered to have been the cause of the palsy, shall we say, that the faculties of the mind were not injured, because the *brain* was not much affected by the general cause of weakness? There is scarcely a disease that can affect the body, by which the brain, from its extensive connexions, must not be more or less affected: but who, that has walked much in the paths of sickness and death, has not occasionally seen, where the powers of life were fast sinking and just ready to fail, the mind acquiring fresh strength, as if already partly relieved from its clay? While many of the phenomena of disease show that there is generally an intimate connexion between a healthy state of the brain and a proper exercise of the mind, the facts we have adduced, prove that the brain and mind are not "one and the same," and that occasionally the mind acts independently of the brain. In proof that the faculties of the mind do not necessarily decay with the body, we might mention the venerable names of Plato, Isocrates, Newton, Johnson, Burnet, Burke, and many others, who exhibited to the world the splendid and interesting spectacle of bodies shattered by age and worn-out by disease, with minds retaining all their greatness, and uninjured amidst the ruins that surrounded them. We ask those from whom we may differ, if any instance can be adduced, in which the faculties of the mind have decayed, while the mind has been cultivated with the same assiduity in old age as formerly? In old age stimulants to exertion are wanting, therefore the mental faculties are too often allowed to remain inactive; then indeed they do decay; but we conclude with Cicero, "manent ingenia senibus, modo permaneat studium et industria." It is time to turn to our proper subject.

An enquiry into the nature of genius is interesting, inasmuch as it is an enquiry concerning that which is productive of the greatest benefit, as well as of the greatest ill, to mankind. Its effects are felt in every department of life, whether it reside with the rustic, making him the counsellor of his hamlet; with the philosopher, placing him in the van of the march of science; or with the statesman, constituting him the shield of his country; whether it glow upon the lips of oratory, or encircle with its halo the visions of poetry. They are exhibited in the prosperity of nations, and in their ruin. It clothes its possessor with that mental majesty, which extorts from envy obedience and admiration,—to which the weak look for protection, and the brave for guidance.

Thus is genius exhibited in its effects:—But what is it? Borrowing partly from Dr. Johnson, we define it "a mind of superior general powers." We cannot suppose that genius consists in the superiority of any one power of the mind, or in the

combination of any particular powers; and think, that a brief survey of the subject will show, that, as the beauty of a palace does not consist in the elegance of one pillar, but in the proportions and skill exhibited in all its parts, so genius does not depend on the excellence of any one power of the mind, but on the vigour and combination of all its powers.

Invention is the criterion of genius. This seems to be allowed by common consent; for all whose characters are established in the world as men of genius, are those who have invented something unknown before, or invented improvements in what was already known. Homer, without a model, constructed one of the noblest poems the world possesses; Socrates invented moral philosophy; the names of Newton and Franklin are illustrious by their discoveries in physics; the memory of Fulton is immortal by his application of the powers of steam to the purposes of navigation; and Sir Humphry Davy has placed himself in the foremost rank among philosophers, by his improvements in chemical science. That invention is the criterion of genius being granted, it is incumbent on us to show how the vigorous exercise of all the powers of the mind are necessary to the act of invention.

The intellectual powers we will consider, adopting Girard's division, as consisting of sense, memory, imagination, and judgment. "Sense perceives those objects which are really existent, and actually exhibited to the mind." Memory revises "past perceptions, with a view to experience of them and to their reality. Imagination considers the notion or thought present in the mind simply as it is in itself, without any view to real existence or past experience,"* and, by association, leads from the idea present in the mind to others connected with it. Judgment compares ideas presented to the mind, discovers their relations, and draws conclusions concerning them.

In the act of invention, it is imagination which ranges through the regions of thought, conducted by association from one idea presented to the mind, to the various others connected with it, separating notions or parts of notions from those with which they were formerly associated;—again combining these into new forms, with a semblance of creative power;—like the bee, collecting honey from every flower on which it rests, however various be the tint, or dissimilar the general qualities. But, to possess that superiority which will lead to invention, imagination must be attended by *enthusiastic activity*, which constantly stimulates it to new excursions, quickly presents it with new views of objects, rapidly separates old connexions of ideas, and as rapidly re-combines them into every form of which they are

* See Girard on *Genius*, and Beattie on the *Imagination*.

susceptible, which so absorbs it in the contemplation of its object as to prevent any interruption of attention, and so fires it, in its pursuit, as to render it careless of every fatigue and labour it may undergo. It was this enthusiastic activity with which Archimedes merged the noise of battle and the terrors of death in his mathematical speculations;—which trimmed the midnight lamp, and dug the early grave, of Henry Kirke White. Without activity of imagination, the mind soon tires in the investigation of a subject; and, however excellent and new may be the associations which are formed, their excellence and novelty rarely compensate for the tardiness with which they arise; and without enthusiasm, as the exercise of imagination, however active, is still attended by much fatiguing exertion, the mind will soon relax in its endeavours, and consider that unattainable which merely has not yet been attained. It is the observation of common life, that enthusiasm, in the pursuit of any object, is one of the surest tokens of ultimate success.

Imagination, however active, can do little towards invention, unless it be comprehensive. It may elicit a spark which will dazzle for a moment, but can never produce that steady lustre which leads to useful results. It is comprehensiveness of imagination, which gives to the productions of genius, that richness which appears to be formed by a happy selection from a vast collection of materials submitted to its choice;—which unfolds to the mind the view of its subject in all its parts, and in all its connexions;—which enables the associating principle to traverse every region, and explore every recess, in quest of its treasures;—and to pass from one idea to another, and through all their modifications, with seemingly unlimited bounds. It was by a comprehensive imagination, that the great poets and philosophers of ancient and modern times have collected in their works materials from every region of nature and art; and have seemed to hold within their reach the universe of ideas, from which to draw all that was conducive to their purpose.

In a work of genius, imagination, active and comprehensive as we have described, surrounds itself with a lustre, which, from hasty observation, conceals the operation of other powers. But, for the perfection of invention, the aid of other agents is essentially necessary. Indeed, without sense and memory,* imagination itself cannot act; for it must be from some one object perceived by sense that association begins, and it must be by the help afforded by memory, that it continues its exercise. Sense is the fountain from which association springs; memory,

* "Memory," says the author of the Literary Character, "is the foundation of genius; for this faculty, with men of genius, is associated with imagination and passion: it is a chronology, not merely of events, but of emotions."—*Lit. Character*, p. 127.

the tributary streams by which it is enabled to roll on its fertilizing course. The objects of imagination are all confined within the limits of acquired knowledge: these it may variously modify, but cannot go beyond them. It is impossible for it to act on those things with which it has no acquaintance by experience or information. When the fervid imagination of Milton mounts to heaven,—is conversant with cherubim,—is immersed in the splendour of the Supreme,—and seems to leave, far below, earth and its grossness, still we find it adoring heaven with the materials of this world;—giving to archangels human forms,—and, by what appears glorious among men, describing the glories of the Creator of worlds.

By a hasty sketch, we have shown how far imagination, with the aid of sense and memory, can proceed in the act of invention. Imagination collects the materials, but the choice and arrangement is the work of judgment;—which compares ideas presented to the mind, discovers their relations, and draws conclusions concerning them. Not only is judgment called into exercise when the collected treasures of imagination are presented to the mind, but the imagination of genius, even in its most free and independent excursions, must still be attended by that power, which detaches it from improper and useless associations, directs it to the track most conducive to the end in view, and calls it off from chasing the cheating shadow of a cloud; and, when imagination has collected its various materials, judgment is the spirit moving over the rich but confused mass, educing order and usefulness. A writer of much imagination, not tempered by judgment, will produce extravagance and folly; but, where sound judgment is connected with an active, comprehensive imagination, the happiest results are to be anticipated,—the production not only of what is new, but what is congruous, useful, great; for there is not a flower that strews the path of genius, nor a column in the proud structure that it rears, in which the influence of judgment is not concerned. The continual influence of judgment on imagination, does by no means injure the exercise of the latter, only renders it more efficient: the ship does not less feel the useful influence of the breeze, on account of the directing helm and rudder.

We thus conclude, that genius consists in a combination of all the powers of the mind. It is this combination which gives intellectual strength, which enables one mind to influence thousands. In proportion as these powers are fully possessed, and properly combined, so far does genius exist.

Whether superiority of genius be natural or acquired, we will not stop here to examine, nor pretend positively to determine. The power of education daily shows itself to be so great, that we know not how to limit its effects; while the records of men

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of genius exhibit such peculiarities of character, as almost persuade that

> "from heaven descends
> The flame of genius to the *chosen breast!*"

One thing must be allowed,—that the circumstances of life, and especially of early life, tend much to determine the characters of men. But the same circumstances produce different effects on different minds: a peculiar concurrence of circumstances, whilst it elevates one mind, may degrade another. We often see men labouring under circumstances apparently the most adverse, and still exhibiting splendid marks of genius; but it is probable, that what appear adverse, are the very causes of the display of genius; and that the same persons, in situations seemingly much better adapted for the exercise of talent, would fall into obscurity. Had Newton been a printer's boy, or Franklin been educated at an university, possibly neither of their names would have been rendered immortal by their discoveries in natural philosophy.

According to our description, there is a complex operation of the mind in every exertion of genius; it may therefore readily be supposed to be liable to disorder. This may arise, 1st, from inactivity; 2d, from imperfection; 3d, from artificial means of excitement; 4th, from excessive exercise.

1st. In some respects, the mind appears to be governed by laws analogous to those which govern the body; for, as continued inaction deprives the body of the power of moving, so *inactivity of genius* deprives it gradually of the power of acting. To this in a great measure is to be ascribed that want of mental vigour which so often attends declining age. At this period, fame ceases her allurements,—ambition begins to lose its power,—life has little more to promise,—the animal spirits are languid,—infirmity unfits the body for the support of the exercise of mind,—and the individual gradually and unconsciously remits that exercise, and at last falls into dotage. But not only in old age does inactivity show its deleterious effects on genius. We often see or hear of men, who in early life gave the fairest promise of future eminence, who, when they have reached their prime, not merely have made no progress in mental improvement, but have gone backwards; and, together with the loss of acquired knowledge, have lost the thirst for it; exhibiting the pitiable sight of the waste of talents and the wreck of mind. This may sometimes be occasioned by their having been placed in circumstances unfavourable to their peculiar turn of mind;

> "many a soul sublime
> Has felt the influence of malignant star."

But often another cause is very evident. Elated with the praise

bestowed upon their early talents, they conceive that, without regular exertion, which is the pabulum of the mind, they can, by their superior powers, attain any object: depending on this, they allow inactivity, like a canker, to eat out the soul and strength of genius.

2d. Although we have described genius as formed of a proper combination of all the powers of the mind, yet, as the mind of man is never perfect, we are compelled to denominate that genius, in which however there are some imperfections, some disproportion in the parts which compose it. Its occasionally great achievements, when circumstances have conspired to repress that power whose action is inordinate, or stimulate that which is languid, establish its claim to this distinction. These imperfections are sometimes causes of disease. We may consider them as circumstantial or essential. Circumstantial imperfections, are those arising from a peculiar constitution of the man of genius, but not implying any deficiency or disproportion in the powers of mind which constitute genius. Essential imperfections, are those which imply some deficiency or disproportion in those powers, as when the action of judgment is not able always to control that of imagination.

Among the circumstantial imperfections of genius, we notice *timidity* and *want of perseverance.* In attempting any work, genius will generally have an extensive view of the difficulties to be encountered: it will measure the region to be explored, will mark what rocks are to be levelled, what valleys are to be raised, what wilds are to be explored. After such a view, constitutional timidity, alarmed by the obstacles which present themselves, too often dissuades genius from attempting what it is well able to perform. As timidity oft prevents the attempt, want of perseverance oft prevents the accomplishment of great undertakings. Both are productive of very deleterious consequences. Timidity, by infusing into the mind capable of forming great designs groundless fear of inability for the accomplishment, throws it into a state nearly allied to despair: genius, parched with thirst, sees the cooling stream roll before it, without the hope of ever tasting its refreshment; and, shackled by want of perseverance, must be the prey of grief and chagrin, by seeing that honourable distinction gained by others which it failed to secure when almost within its grasp. That the feelings of a man of genius, in such circumstances, will be exquisitely afflicting, the history of genius gives strong ground for concluding. Honourable fame is dear to genius; and few will censure the mournful exclamation of Kirke White, when he saw the grave opening to receive his body, and as he thought his dearly-earned reputation, from the world: "Fifty years hence, and who will hear of Henry!" We find those, who had

no cause to reproach themselves with want of exertion, and who had accomplished great designs, yet sinking into despondency on seeing themselves surpassed by others. He is rare who can comfort himself with the reflection, that "Sparta has many a worthier son than he." "When some of Morillo's paintings were shown to Castillo, the great painter of Seville, he stood in meek astonishment before them; and, when he recovered his voice, turning away, he exclaimed with a sigh, '*Yà murio Castillo!*'—Castillo is no more! Returning home, the stricken genius relinquished his pencil, and pined away in hopelessness." If such be the anguish of those who, though excelled, were true to their inspiration, what must be his sorrow who sees that crown grace the head of another, which, but for want of exertion or perseverance, might have bloomed upon his own! Settled melancholy must often be the effect of such sorrow. Observation shows the effects of grief to be debilitating to the whole corporeal system: hence the torpidity, the pale countenance, the cold extremities, the disinclination for muscular motion or mental exertion, which attend its victims. From the diminished circulation in the extremities and surface, arises the painful sense of fullness which is attendant on deep sorrow; as the larger vessels of the body must thus necessarily be over-distended with blood. That there is an intimate connexion between the skin and stomach, is a principle well established in medicine: the action of the vessels of the skin being diminished, the stomach is affected, probably through the connexion of nerves; while, at the same time, the internal vessels, receiving an inordinate quantity of blood, expose that organ to still greater disorder: and hence arises that acute pain in the pit of the stomach, which grief so often produces, especially in nervous temperaments. That the over-distension of the internal vessels is concerned in this affection, receives much probability from the observation of Crichton,* who says that he has seen this kind of gastrodynia, in two instances, followed by hæmorrhage from the stomach, lungs, and uterus. The same causes will produce plethora of the vessels of the liver, and consequent disease of that viscus. These disorders, thus produced by grief, re-act upon it, and aggravate that dejection of mind from which they at first originated; for, produced by any cause, depression of mind is one of their invariable consequences. When added to original grief, they act with a force which few minds can withstand. Deep sorrow will take so firm a hold upon its victim, as to preclude from his thoughts every subject not connected with his unhappiness. Life has its shade and its light; but his mental vision is active only in its darkness: he becomes so enamoured

* Crichton on *Mental Derangement*, vol. ii. p. 190.

+ Why not give Johnson the credit for the remark?

with misery, as to flee from the comforts of friendship, and the calls of business or pleasure, that he may indulge his gloomy meditations: the sand of life ebbs in its glass, the flame of genius quivers in its socket,—he dies! the pity, if not the contempt, of his acquaintance! This is the melancholy effect which may follow timidity in not attempting, and want of perseverance in not executing, the designs of genius.

The only *essential* imperfection of genius which we will now cursorily notice, is that in which the imagination is disproportionate, in its action, to the judgment. In our description of genius, we mentioned that the speculations of one with a great disproportion of this kind in the powers of the mind, would end in folly;—it has often ended in insanity, as the records of every lunatic asylum testify:* but, even when existing in a smaller degree, it is often productive of baneful consequences. While it constantly exposes its possessor to errors and imprudencies in conduct, which, in a well-proportioned mind, judgment would have prevented, it makes him liable also to the most cruel disappointments. By a morbidly-active imagination, hypotheses, which have but the semblance of probability, are embraced as truths; it sees a friend in every smile, and hears the promise of success in every whisper of hope; it never supposes that the day which is bright at the dawn, can blacken with clouds; and concludes, that the attainment of its object of pursuit will be as easy as its desires are ardent. Thus acting beyond the control of judgment, if that power is not altogether dispossessed of its seat in the mind, the consequence, at least, must be disappointment. The best-concerted schemes are often thwarted, well-founded hope is often deceived; then how frequent must be his failure and dissatisfaction, who begins to build without counting the cost, who has never considered that deception smiles, or that friends can betray,—that hope can be illusive, or merit envied. Chagrin often occurring, as it will, in the paths of such an one, is apt to drive him to a contrary extreme: some having deceived, he supposes himself the object of the deception of all; the world seems his enemy, every misfortune is exaggerated; falsehood having betrayed him, he now suspects every kindness, and mistrusts every promise; having failed of obtaining his objects by not employing proper means, those objects, he conceives, by some malignant fatality, are placed beyond his reach; disappointment preys upon him, and too often produces that gloomy melancholy, with its direful consequences on mind and body, which we have already described.

3d. In a state exposed to vicissitude and vexation, encumbered with a body liable to lassitude, sickness, and pain, genius

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* See Rush on the *Mind*, p. 38.

is often chained in its exertions; no wonder that it hails with pleasure what can set it free: shut out from the paradise of its meditations, it readily yields to any influence that can open the gates of lost happiness. With the powers of his mind languid or ruffled, the man of genius, to restore their activity and soothe their commotion, too often resorts to artificial means: alcohol and opium are both subservient to his purpose. We will now only notice opium, as thus used, and some of its hurtful effects. The effects of this drug, in exciting the mind to action, is peculiarly enticing, especially to those who revel in the regions of fancy: under its influence, the storm of passions is hushed to a calm, the clouds of despondency dissolve away, and the mental faculties seem to acquire new strength and splendour. But this state of enjoyment does not last long; the charm is soon broken, and more than in proportion to former elation and enjoyment is the depression and misery that follow. This is according to the experience of all who have observed the effects of opium on themselves or others. The depressing consequences of each dose taken is a new inducement to repeat it, and at the repetition of each dose habit calls for a larger portion. The deleterious effects of indulgence in it, on mind and body, are various. The effects on the body are, dyspepsia, and all the consequences of diminished secretions. "Probat, ab usu hujus remedii (opii) diuturniore, organa chylopoiesi et sanguificationi inservientia, adeo debilitari posse, ut officiis suis imparia reddantur." "Experimenta Alstoni opium circuitum in vasis minimis, priusquam in majoribus, cohibere probant." "Secretiones cohibet." "Alvum constipat."—Bard *de viribus opii.*

Under the effects of opium, the body is rendered less susceptible of external impressions, on account of the diminished circulation in the smaller vessels; and this, perhaps, conduces to produce increased vigour of mind, by preventing interruption of thought. When those effects have ceased, the circulation, returning to the smaller vessels, will render the nerves connected with them morbidly sensible, and hence more liable to violent impressions. We now perceive how the continued use of opium may produce disorder of mind: the viscera of the body are diseased, which, as we before observed, produces a depressing affection of the mind; the nervous system is irritable, and the mind often sympathizes in its irritations; the mind is often at the height of joy, or in the depth of misery, through the excitement of opium, or the want of it; and Rush observes, that frequent and rapid transitions from one subject to another, is a cause of intellectual derangement. These combined consequences, if they do not produce mania, often produce that modification of it generally called hypochondriasis, or, as we think, more properly styled by Rush, tristimania.

Perhaps it is scarcely affirming too much when we say, that, after a person has long indulged in the use of opium, whenever he is not under its inebriating influence, (that is, whenever he is himself,) his mind is more or less deranged; for it is then deprived of its powers of action, and sees objects in a false light.

4th. We will next attend to the diseases of genius arising from *excessive exercise.* The mind, as well as the body, is rendered by proper exercise more strong and healthy; but is liable to much harm from exertion very violent or too long continued. As the mind is affected by fatigue of body, so is the body by fatigue of mind. Men of genius, who, aided by industry, are enabled to make deep researches, and take comprehensive views in science, to range among objects which inferior minds dare not attempt, are too apt to exert the mind to excess. Bodily feeling is lost in the ardour and intensity of intellectual exertion, and it is not till the mind has in some measure attained its end, and has begun to rest from its labour, that the hurtful effects on the body are perceived: then is felt langour, depression, anxiety, and restlessness, in proportion as the mind has been laboriously employed. Excessive exertion of mind, long continued or often repeated, soon affects the organs of digestion; and hence frequently originates that distressing mental complaint, well denominated tristimania.

In any great exertion of the mental faculties, there appears to be a considerable flow of blood to the head, occasioning there some degree of congestion;* as is evident from the head-ach, vertigo, redness of the face and eyes, which occur in debilitated persons from a very slight exertion of mind, and in healthy persons, when the exertion has been uncommonly great. This flow of blood to the head, acting as a preternatural stimulus to the blood-vessels of the brain, is followed by indirect debility of the brain. Through the connexion that exists between the different parts of the body, its other organs will sympathize in this debility; which also is partly the cause of that mental depression and anxiety which attends disease of the body, from too great exertion of mind; for, as the perceptions of external objects are conveyed to the mind through the medium of the nerves and brain, these being in a disordered state, must generally affect the functions of the mind.

Moreover, debility of body from mental exertion seems also to arise from this, that, while there is a preternatural flow of blood to the brain, the secretions of the body in general are lessened; the organs of digestion and chylification are deprived of their proper action, as the diseases of studious men plainly

* Crichton on *Mental Derangement,* vol. ii. p. 29.

evince; the intestinal canal loses its due irritability: for it is found that cathartic medicines are much slower in their operation on one who is engaged in study, than on another whose mind is unoccupied.

The body is also weakened by loss of sleep, which is often the effect of intense application of mind to any subject; for it is found that, when the attention has been very much engaged on any particular object, the associations thereby excited continue to act long after all voluntary exertions of attention have ceased: every one must have observed this. Boerhaave mentions, that, having been exercised with intense thought during a whole night on a serious subject, he did not sleep for two weeks, and during that time was perfectly indifferent to everything around him. Zimmerman, in his work on Experience in Physic, mentions the case of a young man, which strongly exemplifies the hurtful effects of intense study. This person engaged very ardently in the study of metaphysics; and, after combating, by increased exertion, an inertness of mind which he perceived coming upon him, lost at last the exercise of every mental faculty, while his bodily health was much injured: after some time his body recovered its wonted health, but his mental disease continued for a year: "without being deaf, he seemed not to hear; without being blind, he appeared not to see; without being dumb, he did not speak." He became afterwards an eminent philosopher. Many instances might be adduced, in which intellectual exertion has proved destructive of life. Too frequent is the melancholy record of genius snatched from the hopes of friends and the world, when its budding flower just began to give promise of the rich fruit that would be produced. Were bodily disease the only evil resulting from over-exercise of genius, it might admit of question, whether, as life is short and uncertain at best, it were not better, in order to make greater improvement in a shorter time, even like Kirke White —to die: but sad experience shows, that not only the body, but the mind also, is diseased by its own exertions.

One disease of the mind thus arising, and intimately connected with the corporeal affections already noticed, is tristimania. This disease of the mind often, perhaps it is better to say generally, arises from disease of the digestive organs. Why disorder of those organs so generally produces this distressing complaint, may be explained in the following manner: The nerves of the stomach, and parts connected with it, are subject to impressions of a peculiar kind, but which are never so powerful as to attract any particular attention of the mind to them; but, when these organs are diseased, unaccustomed impressions are made upon their nerves, both by the disease of the parts themselves, and by the aliment taken into the stomach not

having undergone the proper process of digestion. Moreover, while new impressions are thus made on the nerves of the digestive organs, these new impressions are transmitted to the brain with more force than the old ones were wont to be, on account of the excitability produced in the brain, from the preternatural stimulus applied to it, by the inordinate flow of blood thereto, which we before remarked as a consequence of intense study. The mind, being acted upon by these impressions, which are new, from the unnatural state of the digestive organs and of the stimuli applied to them, which are strong, from the peculiarly irritable condition of the brain, and which are often painful, is alarmed, and, not guided by experience in referring them to their proper cause, is often led to assign the most absurd. Hence the numerous anecdotes which are related of persons supposing they had living animals within them; that they had been changed into wood, glass, &c.; that they had been poisoned, or changed into animals of a different species. We will not intrude a repetition of these. From no disease does man suffer more than from that whose cause we have just endeavoured to explain. During its paroxysms, (for it is observed to have paroxysms,*) all the faculties of the mind cease their useful action, and are exercised with the most severe suffering: genius loses its pre-eminence; and the torment of the patient is such, that he often wishes for, and often seeks, death as a relief. Tristimania, as well as that other form of mental disease which we shall presently mention, often terminates in general intellectual derangement, which perhaps always precedes suicide.

The next disease which we notice, as arising from excessive exercise of the mental faculties, is that which is caused by intense study upon a particular subject, the full comprehension of which may be within the scope of human intellect, but is oftener beyond it. Mental perceptions appear to have corresponding sensorial impressions, which are transmitted to the extremities of different nerves with a force proportioned to the vividness of the mental perceptions. When the extremities of nerves are strongly impressed, we are liable to ascribe the impression to external objects, through the dictates of experience; so a person of full habit stooping down, and thereby occasioning some congestion of blood in the vessels of the head, which produces an unusual impression upon the optic nerve, is led to believe the spots, &c. which he sees, to be objects without him, until better informed. Now, the brain being in a state of excitement from intense study, and receiving repeated impressions from one particular set of notions indulged by the mind, it is easy to conceive that these impressions may, at last, acquire a

* See Rush on the *Mind*, p. 38.

vividness unnatural to any but those received from external objects; and hence the subject of such impressions is led to believe in the real existence of that which has a being only in his own thoughts. Particularly is this apt to be the case, when the subject of study is one beyond the reach of human capacity. The exertion of the mind must be in proportion to the difficulty of the subject; but, when that is incomprehensible, the mind, violently exerted, enjoys little rest from that exertion: once ardently engaged in the pursuit of any object, it rarely ceases pursuit till in some measure it has attained its end; when that end is unattainable, its strenuous, constant, and vain endeavours, must produce a state of brain peculiarly liable to mental illusion. Crichton, (vol. ii. p. 65,) after having adduced a number of examples, illustrative of delirium produced by intense application to subjects of study which give an extraordinary degree of force to imagination, observes, "the examples which have been brought forward are surely quite sufficient to prove the melancholy truth of the hypothesis laid down, that representations of the mind, when frequently renewed by acts of the imagination, at last acquire a degree of vividness which surpasses those derived from external objects; and, as the principal quality of a mental perception or representation, which makes us believe in the reality of the object or objects which it represents, is the clearness of its parts, it is not wonderful that men of genius, who often confine their attention to one branch of study, should be more exposed to such illusions than any other class of people." Hence, we find persons who have engaged in the study of the Trinity, with a desire of comprehending the manner of the union of three persons in one Godhead, (a doctrine which, though written with a sun-beam in Scripture, still we cannot hope to comprehend,) have frequently supposed themselves to be one of the Trinity. The intense study of other subjects connected with the Christian religion, which are given us as objects of faith, which have testimony of their divine origin, but which, while the mind is veiled by its clay, must remain mysterious, have produced a similar effect. More than one person, by vainly endeavouring to ascertain the precise time when the millenium should arrive, have had all the faculties of mind so absorbed in its contemplation, as to be applied to nothing else; and have had those faculties so deranged, as, with a presumption of prescience, to fix the date of its arrival, or declare that it was already at hand. The Rev. John Mason, of Water Stratford, near Buckingham, England, died fully persuaded that, as the Elias, he had a divine mission from Jesus, to announce the approach of the millenium, which was to begin in his neighbourhood. Professor Gruner, of Jena, mentions the case of a student of theology, at Leipsic, who,

from intense study of the Revelations of St. John, had his intellects so disordered, as to consider himself divinely inspired, and who at last became so deranged as to murder his father. From the same source are to be derived the dreams of Baron Swedenborg, and of the amiable St. Theresa of Spain. The Christian religion stands unreproached by any of these consequences: it never produced them. They were the result of an attempt to learn that which it never taught. Its doctrines, sincerely and humbly received, are the surest guards against mental disease: the subject of them is enabled to stand unchanged amid the changes of the world,—amid its convulsions, unshaken; to bear prosperity with equanimity, and adversity with fortitude; to bound joy within its due limits, and to restrain grief from excess; to fix hope on its proper object, and to lose fear in the confidence of mercy.

In the study of all arts and sciences, the species of mental disease of which we have spoken, has been produced by similar causes,—by attempts to discover that which is not discoverable, to know what cannot be known. Perpetual motion, the quadrature of the circle, and the philosopher's stone, have destroyed more than one mind.

For interesting cases, illustrative of tristimania, and of the last-mentioned mental disease, which falls under Rush's description of amenomania, we refer to the writings of that great man, and to Crichton on Mental Derangement.

In closing our subject, we would mention a few means which appear useful in preventing diseases of genius. As in the body, so in the mind, different persons are so differently constituted, that what would be excessive exercise in one would be moderate in another: we cannot establish any standard in this respect. It is evident that, to prevent disease from exertion of genius, we must prevent too great exertion. Our feelings must be our guide in this; and a sense of bodily fatigue, weariness, a kind of fullness and tension of the forehead, often producing severe head-ach, are faithful monitors that the mind needs rest and relaxation. When Buffon was absorbed on a subject which presented great objections to his opinions, he felt his head burn, and his countenance became flushed; and this was a warning to him to suspend his attention. A person deeply engaged in study may not attend to these feelings; but this inattention arises from no idea of danger having been associated with them. Once associate strongly with them the idea of danger, and that too of the most awful kind, and he will easily cease mental exertion on their approach. Studious men, when they are conscious of the feelings we have mentioned, often consider them as the effects of indolence, and endeavour to shake them off by increased exertion; but let them remember, that they thus

endanger not only bodily health, but also the proper exercise of every useful faculty of mind. This weariness and sense of fatigue, is widely different from that sluggishness and unwillingness for exertion which attend the gross and sensual,—those whose aim is fixed on nothing great in attempt, or noble in accomplishment. Their fatigue is weariness before labour; like some domestic fowl, unwarily raised into air, which flaps its heavy pinions for a moment, and then drops to its accustomed level, they require constant incentive to keep them on the wing; while those to whom we recommend caution, are like some noble bird of heaven, stretching its flight towards ethereal regions, which soars and soars, unconscious of fatigue and reckless of danger, till it dies in the clouds.

Another means of preventing disease from over-exercise of mind, is, to have several objects of study, which, if they do not become main objects, may serve for amusement as well as instruction; for, as Crichton seems well to have observed, "when the objects of study are numerous, and do not belong to one subject only, the habit of easily passing from one association of ideas to another easily increases; and thus, all the faculties of the mind have a more equal degree of exercise." Change of employment, of either mind or body, relieves fatigue.

The studious man of genius should often indulge in social company: this tends to divert the mind from its austere pursuits, and breaks-in upon those strong associations, which else might lead to evil consequences. The sage, in Rasselas, says, "If I am accidentally left alone for a few hours, my inveterate persuasion rushes upon my soul, and my thoughts are chained down by an irresistible violence: but they are soon disentangled by the prince's conversation, and are instantaneously released at the entrance of Pekuah."

Another preventive means, is, never to engage in study just before retiring to rest; for, besides the corporeal effects produced by loss of sleep, from the associations thus excited continuing to act after the voluntary exertion of attention has ceased, these associations make a much deeper impression on the mind in the darkness and silence of night, than during the interruptions and variety of the day.

With the means enumerated must be used exercise of body, which preserves it as a machine in proper order to be acted on by the mind.

For the cure of the diseases of genius we refer to the writings of Rush, whose comprehensive mind was much applied to this subject; and gladly ought we to receive the instructions of such a man on any subject. The powers of his genius were so guided, as to be productive of lasting good to his country and to mankind. His enemies, whilst they prowl around his grave,

and vainly endeavour to tear thence the laurel which will ever be green over it, still profit by his labours. When the ephemeral fame of such men is withered, and their names are repeated by no tongue, Rush must be remembered as one, than whom the medical profession can boast none greater—none better!*

FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

Case of Bronchotomy. By Dr. AMASA TROWBRIDGE. *Originally read to the Medical Society of New-York.*

MARY ANN DEAN, aged seven years, of the town of Rodman, Jefferson-county, on the 15th November, 1818, at twelve o'clock, M. accidentally drew into the trachea a large dried garden-bean. She was nearly suffocated in the first minutes after the accident. A neighbouring physician was called, who found the child, as he supposed, expiring. In the hurry of proceedings, an emetic of ipecac. was administered; it soon excited the stomach, and threw out a bean. The child at the same time became relieved: there was a belief that the bean was thrown from the windpipe. A messenger had been despatched, to request my immediate attendance. I arrived at nine o'clock, P.M.; found the patient an uncommon intelligent child, possessing much fortitude and consideration. She told me she was much relieved after taking the emetic; but that she then "had a pain in the upper part of the breast, and that it hurt her there extremely to make a long breath; that there was a constant disposition to cough, which she prevented as much as possible, fearing, if the pain came again higher into the throat, it would kill her."

Respiration was disturbed; there was a strong disposition to cough, and rattling in the throat. A bean having been thrown out in puking, I was induced to believe that the symptoms might be occasioned by the irritation the bean had produced, by passing into and out of the trachea, and that it was probably expelled. I left the patient, with directions, if symptoms of the bean's being in the windpipe should return or increase, to inform me; at the same time pointed out the necessity of an operation, to give relief. At six o'clock, P.M. on the 16th, a messenger informed me that the child had suffered several extreme paroxysms of distress, and that the most urgent symptoms of suffocation had prevailed, attended with convulsions. As it was evening, and the patient ten miles from me, and the addi-

* We shall be thankful to Graduates who will send us copies of their inaugural theses. We are disposed to publish select ones, or extracts from them, in our Journal occasionally.—EDIT.

tional difficulties attending an operation in the night, I delayed visiting till morning.

17th, eight o'clock, A.M. found the child extremely feeble, with quick small pulse, a distress in breathing, and other symptoms, that produced conviction in my mind that the bean was lodged in the bronchia. I immediately prepared for the operation: placed my patient upon a firm table, with a twisted pillow placed under her neck, and the head pressed back; her body and extremities supported and secured by assistants. I made an incision in the direction of the trachea, beginning near the cricoid cartilage, and carried it down two inches, dividing the muscles and integuments. A profuse bleeding was occasioned by a division of the left subclavian vein, which passed obliquely across the trachea: I placed ligatures upon the bleeding extremities. I now began at the third cartilage, and divided the trachea in a perpendicular direction one inch, through three of the rings: the patient respired freely and easily through the opening. The bean not being discovered, I placed a steel distender: this separated the lips of the wound, gave an opportunity for instant inspection of the cavity of the trachea, and the introduction of instruments for extraction of the bean. Some coughing ensued, and a bloody mucus discharged at the wound. My patient was turned upon her side, and permitted to drink milk, which she swallowed with ease. She remained in this situation one hour. Finding but little disposition to cough, I introduced a bent probe, with a scoop point, into the bronchia: this produced coughing, and bleeding from the bronchial vessels. The patient being considerably exhausted, and the bean not making its appearance at the opening, I directed light food to be given occasionally, and delay of searching for the bean, in hopes that it would soon appear at the opening. Left the patient, 3 o'clock P.M. Visited again on the 19th, 7 o'clock A.M.: was informed that the child had taken food, and slept considerably during my absence; that a rattling in the throat and difficulty in breathing had been increasing for the last twelve hours; found her pulse extremely small and quick, cold extremities, laborious respiration, free discharge of mucus at the opening, a feeble action of the left lung, an unusual heaving or rising, and convulsive action, of the right one, a livid countenance, with the usual symptoms that attend a patient in the last stage of pneumonia. I was fully satisfied that the bean was lodged upon the left branch of the trachea; that it impeded the inflation of the left lobe of the lungs; and that the patient would not, from her feeble state, be able to raise it from that position.

I bent a silver wire, twelve inches long, at its centre; formed a loop at the bent end, half an inch in diameter; bent the loop

× very wrong indeed

so as to form a hook. This I introduced through the opening, down to the right branch of the trachea, with the hook turned to the right lung; this produced strangulation. After a few efforts made by the child, I suddenly turned the hook to the left side, and drew it up; found the bean was inclosed in the hook; drew it within an inch of the opening, when it slipped from the wire. I withdrew the wire, and introduced a pair of small round forceps, placed them upon the bean, and drew it out. I now withdrew the steel distender, and closed the wound by drawing through the muscles and integuments a ligature, and covered with adhesive plaister. Respiration, and expectoration of bloody mucus at the mouth, easy. A gradual recovery, attended with prickling sensations upon the extremities, with the usual symptoms of resuscitation, appeared for the first twenty-four hours. Directed the inhaling of the vapour of hot water; a cataplasm applied over the wound and neck; mucilages for drink; the extremities to be frequently steamed with warm water; a bleeding in twenty hours, and cathartics, if necessity required it. Left the patient, four o'clock P.M. Visited on the 21st, nine o'clock A.M.: found the patient rapidly recovering; the wound closed externally by the first intention; some pain in swallowing, occasioned by the action of the muscles through which the ligature passed. Since, entirely recovered.

Remarks.—In all cases of bronchotomy, the steel distender is preferable to tubes. In placing a tube where there is a substance to be extracted or forced out by coughing, the operator is extremely embarrassed: he has no opportunity to inspect the cavity of the trachea, or to seize the offending substance when it is thrown to the opening. The tube is constantly thrown out, or pushed too deep, into the trachea, or filled with blood and mucus, so that its frequent removal and replacement becomes necessary. The steel distender, with indentations on its outer sides, remains firm where it is placed; opens the incision, so that the cavity can constantly be inspected, the offending substance seen, thrown out by coughing, or searched for by suitable instruments. In the operation, when performed for croup, the distender is preferable to the tube; and the perpendicular incision into the trachea may be made more successful than the transverse one. It is generally admitted, that, in cases of croup, there is, after the third or fourth day of the disease, a membranous lining of the trachea formed, commencing at the larynx, and extending to the bifurcation of the trachea, of considerable tenacity, varying in thickness and density: a quantity of mucus is at the same time constantly emitted from the lungs; suffocation may take place, by the thickening of this morbid membrane, and the lodgment of mucus in its cavity, or for the want of powers in the system to throw it off, or passage in the glottis

for this secreted mass of purulent matter, or serous effusion, to be thrown out. No person of experience or sound understanding, would suppose, that a horizontal incision between the rings of the trachea, and placing a tube, could relieve; but, if the incision was made perpendicularly and freely through the rings of the trachea, and a distender placed, if the membrane or morbid mass could not be removed immediately with forceps and scoops, it would give free exit to secreted mucus, and prolong life, till the membrane separated from the trachea, and be easily removed or thrown out. The needle and ligature is preferable to adhesive plaister, for securing a wound in this operation. The want of success in uniting the sides of the trachea, when it is divided perpendicularly, is owing to their not being kept in contact: divided cartilage unites in the same manner, and with as much certainty, as bone, when kept in contact. The act of swallowing disposes the two edges to separate; and, without they are brought firmly together by passing a ligature deep through the adjoining muscles, there is danger that they will remain disunited, and occasion serious difficulties. There is but little inconvenience from blood drawn into the trachea through the incision, when an offending body is lodged in the lower part of the trachea. An offending substance may be drawn into the trachea, lodged near its bifurcation, and remain there for weeks, without producing much distress; but, when raised to the epiglottis, the patient is in a state of suffocation, and may expire suddenly.

FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

Unusual Case of Polypus in the Throat and Cavities of the Face; successfully treated by Dr. Trowbridge.

ON the 11th of July, 1818, I was requested to examine Samuel B. Turner, aged 16 years, who was brought by his father, to receive, if possible, surgical aid and assistance.

This young man had been, three years previous, attacked with pain in the left eye, extending at times to the fore-part of the head, with difficulty of breathing through the left nostril, and hoarseness.

Nothing was discovered in either nostril, which induced physicians, who first saw him, to suspect the affection to proceed from a polypus.

The second year increased the above symptoms, with the addition of a sensation of fullness in the throat, with occasional bleedings into the mouth, and falling-down of small fleshy substances of the size of filberts.

It was supposed to be a case of *scrofula* by physicians who saw

him, and had been treated accordingly! The last twelve months had increased the affection materially; and, to an observing and intelligent mind, must have placed the nature of the complaint beyond all doubt or controversy.

At the time I examined him he was much emaciated: deglutition was so difficult, that he could pass nothing but liquid food, and that required much exertion. The neck was enlarged externally; a large hard substance, of a dark crimson colour, filled the throat and cavity of the mouth, pressing the velum palati to the teeth of the upper-jaw, and resting on the tongue, epiglottis, and uvula, impeding respiration, and rendering it similar to, and as difficult as in, cases of croup. The face, on the left side, was distorted. The eye, pressed forward from its socket, was enlarged; its vessels turgid, and its coats inflamed, with loss of vision; its lachrymal duct obstructed, and its humours running on to the cheek. The face, on this side, was much enlarged. The upper teeth loose, and partly pressed from their sockets. The voice changed; its resonance and tone entirely lost. A tumor appeared externally near the connexion of the temporal bone with the antrum maxillare as large as a common-sized egg, occasioned by a hard substance that had filled the antrum, crowded the bones asunder, and passed out under a portion of the temporal muscle. The patient was affected with a stupor and dozing at times. Pulse frequent, and feeble. On enquiring, found the young man had enjoyed good health previous to this attack of local disease.

Cases of polypi in the nose and throat had frequently been presented to me, and the use of forceps had been made with success in all cases which had fallen under my care. But this case exhibited a different aspect from any I had ever seen or treated. In the patient was exhibited a picture of human distress and misery beyond description. Frequent hæmorrhages from the mouth had reduced him to extreme feebleness, and his situation was like one suffocating in the last stage of croup. The tumor that appeared in the mouth was hard and painful to the touch; when touched or pressed, it occasioned a hæmorrhage, pain in the eye and fore-part of the head. Distressed days and nights, with constant danger of suffocation, attended the poor sufferer.

No case in the whole round of surgical business could be presented, that could excite more interest or exertion in a surgeon to relieve than this.

Extirpation of the tumor from the throat, was the first and principal relief to be given. The danger of fatal hæmorrhage forbid the use of forceps: I had recourse to the ligature. I procured a flexible silver wire, nearly two feet in length, bent it in the centre, and brought the two ends together. My patient

was placed in a chair, his head thrown back, and supported by assistance. The bent end of the wire was now introduced into the left nostril, and pushed on till it appeared on the same side of the tumor in the mouth: with the forceps I now brought the wire out of the mouth, opened it at the bent end, and formed a loop sufficiently large to pass on to the three first fingers of my right hand. My fingers, with the wire, were now passed into the mouth, and directed to the fauces, or lower part of the tumor. The exertions of the patient to resist suffocation raised the tumor, so that I passed the noose off my fingers around the depending portion; with my left hand hold of the wire at the nostril, I drew them sufficiently tight to be convinced that the wire was around the tumor. I now with my right hand, with a curved probe, split at the end sufficient to receive the wire, enlarged the noose, and pushed it high upon the tumor and nearly to its base; drawing at the same time firmly the ligature with my left hand. I now passed the wire at the nostril through a silver tube, six inches long, and curved at its extremity sufficiently to pass easily into the posterior nostril. This I pushed deep; and, drawing the ligature firm, fastened it to the ring of the tube.

In passing the ligature around the tumor, it occasioned a violent hæmorrhage: drawing it through the uvula, produced extreme pain in the affected eye and fore-part of the head.

The patient was directed to keep in an erect posture; the ligature to be tightened every day, till inflammation, suppuration, and a detachment of the tumor, should take place.

He passed the first forty-eight hours with but little alteration in symptoms or situation. On the morning of the third day the tied portion of the tumor began to enlarge, and all the complaints it previously caused were much exasperated. Deglutition and respiration were so much impeded, that prompt relief became necessary.

With a scalpel, I incised the portion of tumor which lay in the mouth: it discharged a quantity of grumous blood, which lessened its circumference, and caused the depending part in the throat to stop respiration entirely. I immediately passed a long dissecting-hook, and fastened it as low upon the tumor as possible, and pressed it up and back, which gave the patient an opportunity to breathe. Extraction became immediately necessary. My assistant, Dr. Davis, fastened another hook into the tumor: with the two, I, with much exertion, brought the bottom of the tumor up and out of the mouth, seized it with a pair of forceps, and brought out a large portion. Dr. Davis at the same time made a division as high in the mouth as possible. My patient was now relieved by the removal of nine ounces of the tumor, and his throat cleared, so that he took food

of any kind, and respired with ease. A portion yet remained inclosed in the ligature, which remained firm. I directed my patient to take wine and nourishment, and wait the effects of the ligature: this came away on the third day after, and the remaining portion of tumor thrown out of the mouth. My attention was next turned to the tumor in the left side of the face: after convalescing one week, my patient was so much recovered from his feeble state, that I ventured to remove this tumor.

A portion of it had passed out of the antrum, and rested in the muscles and integuments over the alveolar circle.

I first made an attempt to extract it from the antrum and upper part of the face, by making an incision in the mouth through these muscles, or to the projecting portion of the tumor. After exposing it, I placed a firm pair of forceps, and made strong exertions, to no effect: the pain produced was excessive. I abandoned this course, and commenced an incision externally over the tumor near the temporal bone, carried it down over the os maxillare superior, till I came into the incision I had made in the mouth. This exposed to view the two projecting portions from the antrum. I now applied a trephine, and opened into the antrum, and divided the remaining portion of the os maxillare. After dividing some membranous adhesions, I drew out with the forceps the whole tumor, and exposed its base, which was near the termination of the antrum into the posterior nostril.

I now twisted the tumor till it separated from its strong hold. A large artery was divided near this point, and was secured with a ligature. The passage of the antrum into the nostril was sufficiently large to admit the little finger of my right hand, which was passed through into the throat: by this means I ascertained that the whole tumor in the nostril, throat, and face, was removed.

Remarks.—This case corresponds with some described by Pott; viz. it was confined to one side of the face, was hard, shed nothing but blood; was painful to the touch, of a dark-purple colour, filled with arteries.

He says further, that such cases ought not to be meddled with. The danger of irritation produced by extirpation occasions the most disagreeable consequences. Mr. Pott describes one other kind of polypi, viz. of a greyish-light colour, sometimes appearing like a membrane filled with water, situated in one or both nostrils, never painful or tender to the touch; can be extracted with no hazard, and but little pain. John Bell, Richter, and other writers, view the subject in a different light; and deny the fact, that polypi are different in their nature, and justify extraction in all cases and stages.

To those who are investigating the subject of polypi, or who are called to relieve those unfortunate persons who may be afflicted with one, the history of Turner's case may be of some use.

FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

Observations on the Treatment of Hysteria. By J. MAHON, M.D.

MY observations on amenorrhœa, inserted in your Journal for November last, were accompanied with an intimation that I should resume the subject of uterine disorders on another occasion; and this I have neglected to do only from an intention of treating the diseases especially incident to women, in an extensive, and indeed a general, manner. I am preparing a series of essays on them, which, when completed, I will transmit to you: but, as some considerable period of time may elapse before they appear, I am induced now to make some remarks on the treatment of the hysterical paroxysm, from a belief that serious injury is daily effected by the means in vulgar use. I should here observe, that it is not my intention at present to treat of the pathology of hysteria any further than may be necessary to explain my reasons for inculcating the use of the measures I shall describe.

Hysteria most frequently affects young females, or those living in a state of celibacy, who have been educated in a luxurious manner as regards both diet and bodily exercise, who are daily subject to the emotions consequent on restrained natural passions, and whose mental functions have been inordinately developed at the expense of those of the rest of the economy. It is, like mania from gastric disorder, peculiar to civilized life; and shows, like that affection, the results of an inordinate susceptibility of the brain to impressions from the rest of the system. Hysteria generally affects those of full habits: it, at least, generally first occurs in that state of the system; but, like all the consequences of impressions on the sensorium, it is very likely to happen subsequently from what is commonly, though vaguely, termed *habit*, in a totally different state of the constitution, and from very trivial causes. It does sometimes primarily occur in a spare and weak state of the constitution; but, in this case, it is always from the influence of inordinate passionate emotions; it never happens as the consequence of mere debility of the system: females dying of marasmus from hæmorrhage are hardly ever affected with it. But, although it depends on a state of inordinate excitement, the hysterical paroxysm, when it affects persons in a state of debility, may sometimes be relieved by stimulants applied to the stomach;

probably by producing a determination to the abdominal viscera, and thus removing the excitement of the brain; and such remedies have therefore been commonly resorted to in every kind of hysterical affection, by a great proportion of medical practitioners. But, if they would contemplate a young female in this state, who had previously been in high health, with a face now tumid and suffused with blood, and a full and throbbing pulse; if they would contemplate this scene with a mind unbiassed by the farrago of confused ideas attached to the terms convulsions, antispasmodics, &c. and consider attentively the effects of stimulating medicines, they must be convinced that such medicines prove highly injurious; and yet to what an extent are æther, volatile alkali, assafœtida, &c. commonly administered on those occasions. As soon as the violence of the fit has subsided, and the patient has become able to swallow, the opportunity is seized to pour down some highly stimulating liquid; and a return of convulsions is generally produced. A fit of hysteria, in a full-blooded female, is, under such medical treatment, rarely of less than four, five, or six, hours' duration; and is followed by severe head-ach and disorder of the stomach for several days, and the disposition to a recurrence of the disorder much promoted: whilst, by an opposite mode of treatment, it may, in a great portion of cases, be almost instantaneously removed.

I was, early in my practical career, led to relinquish the stimulating plan of treating hysteria in young females; but it was not until the case I am about to relate occurred to me, that I was led to pursue the method I shall presently describe.

I was called to visit a patient, an unmarried woman, 22 years of age, and of a spare habit of body, who had been about an hour in a severe hysterical paroxysm. I learned from the attendants, that she had complained of pain about the loins and hypogastric regions for two or three weeks previously; that menstruation had been effected irregularly, and somewhat profusely, for four or five months past; and that, within the last eight days, she had before experienced three severe fits of hysteria, each of which continued four or five hours. On passing my hand over the abdomen, with a view of ascertaining if there were any tension or swelling in that part, I was somewhat surprised to feel a violent throbbing about the epigastrium, in the situation of the cœliac artery. This furnished an indication, which I immediately followed, and abstracted twelve ounces of blood. In five minutes the patient became perfectly sensible, and she experienced no return of the convulsions. Blood-letting and purging were afterwards employed.

Since then I have always examined the abdomen in patients in a fit of hysteria, and have very frequently, in thin and young

persons, detected a similar pulsation of what I suppose to have been the cœliac artery: it is almost needless for me to say, that I have since then but rarely employed stimulating internal medicines in the treatment of this disorder.

The measures, then, on which I have placed most reliance, have been bleeding, cold air, cold drinks, and especially cold applications to the abdomen; and I have sometimes ordered one of the attendants to dash a vessel of cold water over the lower part of the belly and the thighs. The effect of the cold application to the region of the pubes, is often almost surprising: the patient utters a scream, starts up, and looks about with astonishment, like a person suddenly roused from sleep, enquiring what is the matter, and the cause of so many persons being about her.

In cases in which I have not employed blood-letting, and where the cold application to the pubes has produced only temporary relief, I have given an emetic of ipecacuanha, followed by nauseating doses of the same medicine, with the most advantageous results. On this point I find I am supported by the opinions of Dr. Smith, of New York, given in your Journal for October last. I should here observe, that, in this, and in other cases where the functions of the brain are much disturbed, ipecacuanha, not tartar emetic, sulphate of zinc, &c. should be employed: it is common to find the latter substances used, from the difficulty with which vomiting is then excited; but this practice is highly deleterious, causing severe injury to the stomach, from the large quantities of those substances often required: of this I have witnessed several instances. There is not this danger attendant on the use of ipecacuanha; and, where the system is so much disordered that this will not produce vomiting, I would strongly advise that the attempt to cause it should be desisted from. I have but rarely employed opium in the treatment of hysteria, and only after the paroxysm has subsided, with the view of procuring sleep and quieting the system; and, even with this intention, I have almost confined its use to patients of a weak and spare habit of body, or when the affection is habitual, or has been immediately caused by some sudden mortal emotion.

The measures I have described have not only been found to be particularly efficacious in removing the paroxysm of hysteria; there is this advantage they also possess over the usual mode of treatment,—they are not followed by the head-ach and disorder of the stomach so commonly consequent on the use of violent stimulants, and they tend to prevent the recurrence of the disease. On the latter point I shall not now dwell. My object has been to prevent the use of the common deleterious modes of treating the hysterical paroxysm, by pro-

posing that which I have myself found to be remarkably beneficial; and which, I trust, will be equally so in the hands of other practitioners, if employed with common judgment. My opinions on the pathology, and remarks on the general management, of this disorder, will be comprised in the essays to which I have alluded.

FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

Two interesting Cases of Pneumonia. By ED. SUTLIFFE, Esq.

IN the month of March last, Miss B. of Hoxton, was seized with rigor, fever, pain in the chest, difficulty of breathing, &c. When medical aid was called in, the usual depletory remedies were employed: considerable relief was obtained by blistering, purging, digitalis, &c. but the fullness of the pulse seemed to authorize the use of the lancet. About twelve ounces of blood were removed. The character of the blood justified the evacuation; but the patient appeared to labour under an instantaneous increase of all the symptoms. The question now necessarily became serious and important: as the pulse continued full, what measures were to be pursued? In this dilemma I was requested to see the party. We agreed in consultation, that, although the pulse was full and bounding, justifying *in toto* all the measures hitherto pursued, no further relief was to be expected by venesection, fearing subsequently phthisis pulmonalis. We had the pleasure to witness the gradual recovery of this delicate female of æt. 19; but with indubitable symptoms of hectic, which, by care in diet, and by breathing her native air in Hoxton, subsided.

I have no hesitation in affirming, without the fear of contradiction, that this subject would have inevitably fallen into phthisis pulmonalis, had the venesection been repeated two or three times more. Again,

"Aude alteram partem."

Miss H. of Nicholas-lane, æt. 21, from exposure to cold three months ago, laboured under fever, ushered-in by rigors, difficulty of breathing, cough, &c. Although the subject was by no means athletic, the fullness of the pulse at once determined the propriety of venesection; the relief from it was instantaneous: the quantity removed was about sixteen ounces. It is scarcely needful to add, that diuretic drinks constituted her whole support; and that blistering the chest, purgatives, digitalis, &c. were added. However, the cough returning, with a full pulse, a second bleeding to about the same amount was employed, and with the same advantage. In three or four days

more, however, it was found necessary, from the recurrence of the diseased symptoms, to repeat venesection in about the same quantity even to the sixth time, (the blood invariably exhibiting criteria of highly-marked arterial excitement,) when steadiness of the pulse, and return of health, began to appear; and convalescence slowly supervened. During this train of formidable symptoms, much pus was coughed-up, with mucus of a strongly saline taste, and occasionally streaked with blood. The sputa were copious and purulent.

The parents and anxious relatives of both these young ladies for a season considered their cases perfectly hopeless. I have the pleasure to add, that I have had an opportunity, within these few days, of enquiring after their welfare, and am assured that not a vestige of disease remains.

It may be right and candid to confess, that the parties persevered in the diligent use of every means recommended, and submitted with readiness to every salutary discipline.

Queen-street; August 6th, 1819.

FOR THE LONDON MEDICAL AND PHYSICAL JOURNAL.

Botanical Characters of the Asarum Canadense.

IN the case of tetanus successfully treated by Dr. Firth, related in the last number of your Journal, a decoction of *asarum canadense* was given to the patient, amongst the other remedies. I believe the botanical characters of that plant have not been given at any time in your Journal; if it be so, you will perhaps be pleased with the following for insertion.

London; Sept. 8th. PHILOPHYTON.

ASARUM, cl. *dodecandria,* ord. *monogynia,* LIN. Cl. v. *dicotyledons,* ord. *aristoloches,* JUSSIEU. Cl. *apétales,* sect. i. TOURNEFORT.

Gen. char.—Calyx three or four cleft, superior; corolla none; anthers growing to the middle of the filaments. Capsule coriaceous, crowned.

Spec. char.—Leaves two, reniform; calyx woolly, cleft to the base; its segments spreading at top. Grows in old woods and mountainous tracts. Flowers from May to July. Michaux styles it "vix distinctum ab Europæo," with regard to form; but its taste is somewhat different, being intermediate between that of ginger and the aristolochia serpentaria. In its qualities it appears to resemble the latter.

COLLECTANEA MEDICA:

CONSISTING OF

ANECDOTES, FACTS, EXTRACTS, ILLUSTRATIONS, &c.

Relating to the History or the Art of Medicine, and the Auxiliary Sciences.

Floriferis ut apes in saltibus omnia libant,
Omnia nos itidem depascimur aurea dicta.

Observations on the Mode in which the Nerves contribute to Secretion in the Glands.

[BORDEU, *Rechérches sur les Glandes*, § cvi.]

WE should now discover in what manner the nerves act in effecting the secretions: that they do thus act, we have fully proved. It should be remembered, that we have stated that the fluids flow in increased quantity to a gland actually engaged in secretion. Before we proceed further, let us demonstrate this proposition.

Let us only stop to view what takes place in the parotids during a repast. They separate, as every person knows, a large quantity of saliva: all this cannot be said to have been contained in the gland; since, as we have elsewhere proved, it is extremely tumefied when it contains but a little water. Now it is never so tumefied before a repast; it does not then contain as much saliva as will moisten two or three napkins, which has been done with the saliva flowing during a repast.

The blood flows to the parotid in a quantity proportionate to the saliva evacuated, that is evident: there flows, then, more fluid to the gland during the time of secretion than at any other time; or else the same quantity of fluid is carried to it more frequently, which comes to the same thing; for, the repast being ended, the parotid employs the whole time to the ensuing one, in separating only as much saliva as is necessary to moisten the mouth. Is not this quantity less than that separated during a repast?

It is easy to apply to every other gland what has been said respecting the parotid. This phenomenon is evident; and, to explain correctly the secretions, it is necessary to commence by giving proper reasons for them: we must not, certainly, neglect the mode in which they ordinarily take place.

This direction of the fluids towards a gland, cannot depend on the simple action of the heart, or on the general laws of the circulation, which have their influence during the secretion of the saliva as well as at other times.

It cannot be said that the gland is relaxed during the time of secretion; since, from what we have elsewhere demonstrated, it appears, on the contrary, that it becomes harder and more solid; which supposes a state of constriction rather than of relaxation. Besides, have we not often remarked, that the nerves act more forcibly during the secretion than at any other time?

How then may this phenomenon be explained? It may be said that the glands act like cupping-glasses; that they draw, in a manner, the fluids. This phenomenon is a very important one even in the theory of many diseases, in which transports of fluids, quite independant of the ordinary causes of the circulation, are clearly evident.

It must be discerned, from what we have hitherto said, that we think this phenomenon should be attributed to the action of nerves; and it is thus we believe they act. They cause the blood to come to a gland, by directing and augmenting the circulation in that organ, which (if it may be so expressed) makes, when it is in action, a sort of *distinct body:* it employs more blood than is necessary for it during its repose. But how do the nerves act then?

Demonstration on this point must not be expected; but the fact is not the less true, although we cannot well comprehend the reason of it. The following is what we think may be advanced on this subject.

Anatomy teaches us that the nerves accompany all the arteries, and we have even seen certain large vessels, as those of the abdominal cavity, enveloped in nervous-like membranes; the nerves twine about the arteries as they accompany them; they appear to seize a trunk, and pursue it to its extreme ramifications.

Supposing that the arteries which go to a gland receive an increase of force by the nerves which are attached to their parieties, we may conceive that, if these nerves happen to act a little more powerfully than ordinarily, the fluids will be carried proportionably quicker from the trunk of the vessel towards its ramifications, and the trunk then relaxing and opposing less resistance to the column of blood coming from the artery whence it arises, it will in turn receive more blood; and so in succession. In a word, the systole of the vessels of a gland, whilst it is in action, is perhaps much stronger than when it is relaxed; the diastole is also proportionably strong: this is the reason why the fluids come then in larger quantity; and this depends on the action of the nerves, which, parting from a ganglion as from a centre, act vigorously on the vessels they accompany, and make them beat much more powerfully; we do not say they beat more frequently. All this will be hereafter explained.

It must be acknowledged, that if the action of the nerves here is to cause a contraction of the small veins of a gland, this contraction might augment the secreted matter;* but it must take place to a great extent to be a sufficient cause; and it is besides easy to perceive, that the veins of an organ in action receive more blood than when it is relaxed, as is seen in the muscles, and as we have observed in a man bled in the jugular vein,—who, by moving his jaw, made the blood spring from the vein, and the saliva flow into his mouth. We see also that the jugular veins of a person in a state of salivation are at least as full as those of persons not in a state of salivation: this latter phe-

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* Bordeu is elsewhere careful to show, that a variation in the degree of nervous influence will cause a difference in the *quality*, as well as in the *quantity*, of the secretion of a gland; and that this is often rendered more poignant by the agency of some of the passions.—Edit.

nomenon may happen, it is true, from the blood not circulating so freely in the veins, which takes place in those who have what are termed transports of fluids to the head: we know not if the veins have not then a tendency to the ANTIPERISTALTIC motion.* This motion, indeed, which we cannot here examine, could only take place from the action of the nerves.

The muscles which are in the vicinity of glands favour also the transport of fluids to the secretory organs: it is apparent that the muscles receive less blood during their contraction; or they may, if it be so desired, receive more then. These two hypotheses do not regard what we are at present considering; it is enough that it appears, the motions of the muscles occasion that of the fluids. We have elsewhere spoken of this action of the muscles in respect to the glands.

On the mode in which the choice of the fluids is effected, or the secretion, properly speaking.—This is the principal question: It is to know why the most subtile of the fluids do not pass into a vessel where the grosser fluids pass; and why that constantly happens, so that the same gland ordinarily separates the same fluid, &c.

The nerves act in a gland; they prepare the organ, and direct the fluids in its vessels; they make the blood, which contains all sorts of fluids, come to it. What, then, is the power which chooses and separates the different parts one from the other?

Are not the nerves themselves the principal cause of this separation? It is thus we may conceive that it is effected: The fluids carried into the vessels, or (if it be required) into the follicles of the glands, have only two courses to take,—that of the secretory vessel or that of the vein, or perhaps that of the venous lymphatics; the fluids, still wholly mingled together, come striking against the orifices of the little veins or of the secretory vessel; but these orifices are each guarded with a sort of little sphincter and some nervous fibrils; they may then contract or dilate according as may be requisite, and this will happen according to the irritation made on the nerves: a too forcible impression will close the secretory orifice; a too feeble one will not irritate it sufficiently to cause it to open. There must be a certain relation between the matter which makes the effort to open the sphincter, and the nerves which direct its orifice.

Secretion is then reduced to a species of *sensation*, if we may so express it: the matters proper to excite a certain sensation will pass, and others will be rejected; each gland, each orifice, will have, if it may be so termed, its particular *taste;* all that is foreign to it will be rejected on ordinary occasions.

The tension that the titillations, and the little irritations proportionate to the tone of the nerve, will procure, will effect the secretion; the sphincter, directed by nerves *attentive*, and insensible to all that

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* As the possibility of such a motion of the veins is not, we believe, generally suspected, we may observe that it seems to be proved by an experiment made by BELLINI and HALLER, and repeated by SPALLANZANI, from which it results, that, if an artery be pricked, the blood retrogrades towards the place of the wound, not only from the extremities of the artery, but also from the trunk of the correspondent vein.—EDIT.

does not regard them, will not let any matter pass until it has given good proofs of its propriety; all will be arrested; the good will be taken, and the bad sent away elsewhere.

The nerves of each gland have their particular tone, as well as those of all the other organs. It has been said that we should see with the foot, if the organ and its nerves were properly disposed; we may say also, that the separation of bile would be effected in the mouth, if the nerves of the parotid gland had another sort of sensibility, or, if we may so venture to express it, another *taste*.

COLLECTION OF RARE AND INTERESTING CASES IN PHYSIOLOGY AND PATHOLOGY.

[*Continued from page* 205.]

Abolition of Sensibility.—There was at the *Bicêtre*, in 1808, a man, 50 years of age, who, for eighteen years, had the right arm deprived of sensibility. The member did not diminish in bulk; he performed every motion with it with the same agility and the same force as with the healthy arm. A phlegmon, accompanied with heat, redness, and tension, took place in it, without the patient experiencing from it the least pain. This person could plunge his arm into boiling water, without any redness being manifest from it. However, a pot of boiling leys having fallen on the hand, wounds ensued, that were a long time before they were cured. This insensibility came on after a fall on the prominence of the shoulder; where several cicatrixes might still be seen. In 1807, when he was scraping up some mortar with a shovel, he felt something crack in his hand; he thought he had broken his shovel; but, perceiving that his fore-arm was bent, he discontinued his labour, but did not present himself at the infirmary until the following day, not experiencing any pain. The two bones were fractured. The patient felt no uneasiness during the reduction of the fracture, notwithstanding the forcible extension that it was necessary to employ.—*Case published by* M. Hébréard, *second Surgeon of the Bicêtre.*

Paralysis.—Wepfer relates, that an hemiplegic old man presented the singular phenomenon of a jaundice affecting only the diseased side. The half of the body was so exactly tinctured, that the nose was yellow on one side, whilst the other half of the same part of the face was of the natural colour.

Metastasis.—Cruikshanks witnessed a spitting of pus in a man who had a fistula in ano. This spitting ceased as soon as the fistula was cured by the operation.

Assalini relates, that a woman after delivery was attacked with a fistulous ulcer in the middle of the thigh. During nine years this ulcer furnished a matter similar to milk. Assalini states that he has seen two other women, who evacuated milk by the navel.

Dr. Gastellier, in his treatise on the acute diseases of puerperal women, relates the following case: A lady of Nemours sent for Dr. Gastellier, to consult him respecting a collection of matter in the inferior part of the left leg, near the malleolus externus. This collection, occurring subsequent to phlegmonous erysipelas, had exten-

nally all the signs of gangrene: it presented a very considerable surface, and fluctuation in it was very evident. M. Gastellier proposed to make an opening into it; but it was late in the evening, and the patient had then much repugnance to the operation: however, this physician persuaded her, to consent to have it done on the ensuing morning. On this day M. Gastellier found his patient in a state of great uneasiness; she was suffering cardialgia and vomitings of purulent matter. On examining the diseased part, he could perceive neither swelling nor fluctuation, nor any appearance of a collection; all had disappeared. An emetic was administered, and the patient vomited a prodigious quantity of white and well-formed pus. Being purged the following day, she voided by stool a large quantity of similar matter: this was repeated five or six times, each dose producing the evacuation of a certain quantity of purulent matter. The cardialgia only subsided under the use of purgatives. The idea of an operation she dreaded, caused in this patient a revolution, which determined this metastasis.

Lemery relates the case of a priest, who suffered for eight years a periodical vomiting, the circumstances of which were very rare. Five hours before he vomited, the patient experienced very violent pain about the loins; the vomiting continued during four or five hours, with some intervals. The matter vomited was of a deep-red colour; this was only water having a strong urinous odour. The patient ate but little; drank only wine, but of this copiously. As soon as the vomiting ceased, he felt very well. Exercise was salutary to him; he suffered much more when he neglected to resort to it.*

Observations on some Electrical Phenomena of different Substances placed on Water. By M. Virey.

Some remarks have already been made on this subject, and the gyratory motions of little fragments of camphor on water have been attributed to the attraction of the liquid to effect their solution; but we shall show that they appear rather to result from electricity.

1°. *The phenomena of rotation.*—Having placed on pure water, at the temperature of about 12° centigrade (about 60° Fahrenheit), different fragments of camphor, we saw them first spontaneously turn on their own axis by a revolutory motion, which sensibly accelerated until it formed a sort of vortex. The little fragments, especially, executed this revolution with a very surprising rapidity. Soon afterwards we often saw these fragments describe an orbit, in the manner of the planets, which roll in celestial space in the double motion of rotation and circulation. When one of the larger molecules turns near one much smaller, the latter ordinarily ceases to turn; for it seems that its motive force is absorbed: just as the moon, in the terrestrial orbit, only turns very slowly on its own axis. The little fragments only commence their motion when the larger molecule has

* See the xxxth and xxxist volumes of this Journal, for some interesting discussion on this subject; especially in the observations of Dr. Yeats.

passed to some distance from them. We have remarked that the lesser molecules often make their rotation from right to left, whilst the greater fragments have appeared to us to effect theirs from left to right. It is rare that the fragments turn in a different direction from that which they first began to take.

2°. *Of the phenomena of attraction and repulsion.*—Most frequently the fragments attract each other: it is towards a projecting angle of a larger molecule that the lesser ones are ordinarily drawn. Each fragment has its poles, and they are differently electrified; for, if there are some which attract, there are others which evidently repel each other: it proves that there are poles of those different kinds. Fragments of common resin, and other resinous substances, equally exert mutual attractions. Shavings of dry wood, more or less resinous, also attract each other in a similar manner. The gums, on the contrary, always mutually repel each other; we see them endeavour to separate. This effect is more evident in the gum tragacanth in powder, than in gum arabic, or common gum of the trees of our own country. The latter are much less readily soluble than the tragacanth.

3°. *Of the influence of conductors of electricity.*—When we approach a rod of iron, or of other metal, very near the fragments of camphor forming vortices on the water, but without touching them, we see these fragments immediately arrested in a remarkable manner. It must be supposed that these metallic conductors should be at a very short distance from the fragment, since the electricity is very weak, otherwise the production of this phenomenon is not obtained. We have not observed that the metallic conductors oppose the attractions of fragments of resin on water; neither do they oppose the repulsions of pieces of gum. It appears, then, that electricity performs a part in many of these phenomena, although it may be difficult to determine its exact degree. The revolution of camphor cannot be the effect of its dissolution, as it has been stated, since the hydro-chlorate (muriate) of ammonia, and other soluble substances, turn but very feebly on their axis; yet they dissolve in water much better than camphor. —*Journal de Pharmacie*, Mai 1819.

An Alphabetical List of the Plants and other Articles of the Materia Medica mentioned in the Works of HIPPOCRATES, *with the Latin Version of* FÖES, *and the Synonyms of* LINNÆUS. [Extracted from a Memoir by Dr. PAULET.]

Αϐροτονον, HIPPOC.; abrotanum, FÖES; artemisia abrotanum, LINN.
Ακανθα et *ακανθα αιγυπτια*; spina et spina ægyptia; mimosa nilotica.
Ακανθα λευκη; spina alba; euphorbia neriifolia?
Αχρας; pyrus sylvestris; pyrus communis.
Ακτη; sambucus; sambucus nigra.
Ακυλος et *ακυλον*; glans ilicis; *fruit du* quercus faginea, LAMARCK.
Αδιαντον; adiantum; asplenium ceterac.
Αδιαντον καλλιφυλλον; adiantum; adiantum capillus Veneris.
Αγνος; vitex et agnus castus; vitex agnus castus.
Αγνος λευκη; agnus albus; vitex leucoxylon.

Αιγειρος; populus nigra; populus nigra.
Αιγειρος κρητικη; populus cretica; populus græca, AYTON.
Αιγος κέρας; fœnum græcum; trigonella fœnum græcum.
Αιρα; lolium; holcus lanatus.
Αλφιτον; polenta; *fruits de l'*hordeum sativum *mondés et en cataplasme par leur décoction dans l'eau et le vin.*
Αμαμηλις; amamelis; *fruit du* mespilus germanica.
Αμαρακος; amaracus; origanum marjorana.
Αμωμον; amomum; amomum racemosum, LAMARCK.
Αμπελος; vitis; vitis vinifera.
Αμπελος αγρια; vitis sylvestris; vitis sylvestris, TOURNEFORT?
Αμυγδαλη; amygdala; *fruits de l'*amygdalus communis.
Αναγαλλις; anagallis; anagallis arvensis.
Αγχουσα; anchusa; anchusa officinalis.
Ανδραχνη; portulaca; portulaca oleracea.
Ανδραχνη αγρια; portulaca sylvestris; euphorbia peplis.
Ανδραχνη ποταμιη; portulaca fluviatilis; peplis portula.
Ανδραφαξις; atriplex; atriplex hortensis.
Ανδραφαξις αγρια; atriplex agrestis; chenopodium bonus Henricus.
Ανεμωνη; anemone; anemone pulsatilla.
Ανηθον; anethum et mentha; anethum graveolens.
Ανισον; anisum; pimpinella anisum.
Ανθεμον; anthemum; anthemis nobilis.
Απαρινη; aparine; galium aparine?
Απιος et απιον; pyrum, pyra; pyrus communis, *et son fruit.*
Αψινθιον; absinthium; artemisia absinthium.
Αρκευθιδες, αρκευθου καρπον; juniperi baccæ; *baies du* juniperus communis.
Αρκευθος; juniperus; juniperis communis.
Αριστολοχια; aristolochia; aristolochia rotunda.
Αρον; arum; arum maculatum.
Αρον μεγα; dracunculus magnus; arum dracunculus.
Αρτεμισια; artemisia; artemisia vulgaris.
Ασπαλαθος; aspalathus; amyris kafal, FORSKAEL?
Ασπαραγος; asparagus; asparagus officinalis.
Ασφοδελος; asphodelus; asphodelus luteus et A. ramosus.
Ασταφις; uva passa; *raisins secs.*
Βακχαρις; Baccar et Baccharis; salvia sclarea.
Βαλανος; quercus glans; *fruit du* quercus esculus.
Βαλανον αιγυπτιον; glans ægyptiaca; *fruit du* guilandina moringa.
Βατος; rubus; rubus fruticosus.
Βατραχιον; ranunculus; ranunculus aquatilis.
Βηχιον; bechium; tussilago farfara.
Βληχον; pulegium; *voyez γληχον.*
Βλιτον ou βλιτον; blitum; amaranthus blitum.
Βολβιδιον; bulbulus; allium ascalonicum.
Βολβιον; bolbiom et bulbulus; œnanthe pimpinelloides.
Βολβιτον; bolbitam; hyacinthus comosus.
Βολβος; bulbus; allium altaïcum, PALLAS.
Βολβος λευκος; bulbus albus; ornithogalum umbellatum.
Βοτανη; herba; cynomoriom coccineum?
Βοτρυς, βοτρυες; uvarum racemi; *grappes de raisin.*
Βραθυς; sabina; juniperus sabina.
Βρομος; avena; avena alatior.
Βρυον; muscus; lichen albidus, SCHRANK.
Βρυον θαλασσιον; mucus marinus, fucus, alga marina; uva lactuca.
Βρυωνη; bryonia; bryonia alba.
Βουκερας ou βουκερας; fœnum græcum; trigonella fœnum græcum.

[*To be continued.*]

CRITICAL ANALYSIS

OF

RECENT PUBLICATIONS, IN THE DIFFERENT BRANCHES OF MEDICINE AND SURGERY.

"I would have men know, that, though I reprehend the easie passing over of the causes of things, "by ascribing them to secret and hidden vertues and properties; (for this hath arrested and laid "asleepe all true enquiry and indications;) yet I doe not understand but that, in the practical "part of knowledge, much will be left to experience and probation, whereunto indication cannot "so fully reach: and this not only in *specie*, but in *individuo*. Yet it was well said, *Vere scire* "*esse per causas scire*."—BACON.

Elements of Medical Logick, illustrated by practical Proofs and Examples; including a Statement of the Evidence respecting the Contagious Nature of the Yellow-Fever. By SIR GILBERT BLANE, Bart. Fellow of the Royal Societies of London, Edinburgh, and Gottingen; Member of the Imperial Academy of Sciences of St. Petersburgh; and Physician to the Prince Regent. 8vo. pp. 219. London: T. and G. Underwood. 1819.

THAT a system of logical principles of a science so interesting to human happiness as that of medicine should not have hitherto been formed, by which the study of it might be reduced to methodic order, rather than, as is the case, pursued in a more or less irregular and indeterminate way according to the disposition of each individual, is a circumstance that may appear extraordinary to persons who have not contemplated this subject in a sufficiently accurate and comprehensive manner. In order to place it in its proper point of view, we should first determine what it is that constitutes the logic of a science, and how the logical principles of other sciences have been formed; for, it should be understood, physics, as well as metaphysics, may each have their system of logic.

Poetry and music present themselves as well adapted for the illustration of this enquiry. Above twenty ages have elapsed since their logical principles were instituted, and the same principles have maintained their original authority down to the present period, amidst all the revolutions of human sentiments, under the different social and political customs and habits that have intervened.

The man of pre-eminent genius, who has collected from any objects the most accurate and comprehensive series of ideas, the mutual relations of which he has also determined, has acquired a system of knowledge of such objects that must be considered relatively perfect. To trace those ideas and the order in which he has acquired and developed them, must, then, display all that is known respecting the subjects of them, and at the same time show the method by which such knowledge may be most

accurately and readily obtained: it is this, we think, which constitutes the logic of a science.

From this view of logic, it must be evident that knowledge must be obtained, before the principles best adapted to direct men in general in its acquisition can be instituted. Such has been the fact with regard to poetry and music.

Homer had acquired the most perfect series of ideas of the good and beautiful, the *καλοκαγαϑον*, of poetical sentiments, before a system of *Poetics* was formed: Aristotle only described the course taken by Homer. Euripides had impressed the mind of man with the most vivid feelings of awe and astonishment, before Longinus could have written his treatise on the *Sublime*.

It was the same with respect to *Music*. The ear of Pythagoras had enabled his mind to discern the relations existing between certain sounds, before he applied the relations of numbers to them to explain the nature of harmony.

If this notion be correct, and further illustrations of it might be readily adduced, but little need be said to show why logical principles have not hitherto been instituted respecting medical science.

Our ideas of the physical, or rather the mechanical, construction of the human body, may perhaps be sufficiently accurate and comprehensive for such a purpose; but the physiology of it is yet obviously very far from being in so perfect a state; and its pathology is still less advanced, although this was cultivated in a correct manner at a very remote era. But subsequent enquirers deviated from the course taken by Hippocrates; vain researches after proximate causes were made, instead of endeavours to trace the history of phenomena; and, though at length Bacon fully displayed the folly of this conduct, it is only lately that his precepts have been followed by the generality of physicians. Of therapeutics our knowledge is far from being accurate, comprehensive, and well-determined; and it is, on many important subjects, vague in the extreme. We have discerned a connexion between certain remote results and certain agents, but we have in but a very few instances traced the progressive phenomena on which they depend. We do not mean to say, that it is to be regretted that it has not been ascertained in what manner medicinal substances primitively affect the part of the animal body to which they are applied; but that we have not discerned the order of the secondary and subsequently progressive trains of results, without which our knowledge of this subject is too imperfect to serve as a basis for any logical principles. Thus, as an example, we know not in many instances whether medicinal substances applied to the stomach affect remote parts of the system by being carried to them through the medium of the fluids, or solely by organic, or functional, connexion. Of one probably highly important

subject, what may be termed *atmospheric* influence on the body, but very little is known.

The mere enumeration of these subjects, as insulated objects of study, shows, indeed, in a very forcible manner, how distant we are from that period, when a solid basis shall be laid for the construction of a system of medical logic. The separating the study of the anatomical formation of the body from that of its functions, and the functions in the state of health from those in that of disease; this, and all our histories of a multitude of individual phenomena as such, may have been useful, and indeed necessary, in a subject comprising such a multitude of various ideas: it is analogous to what has been done, apparently with benefit, in other and more confined sciences; but, even though the distinct histories of each of those subjects were rendered perfect, a system of logic could not be formed, until some mighty genius shall arise, who has the awful power of mind to comprehend the whole at one view; to trace, at the same time, the series and order of the phenomena, and to determine their relations under every variety of known circumstances. But, when may such a genius be expected to appear? The history of man shows that nations have risen, flourished, and fallen, without an ARISTOTLE having been produced.

The hope, then, that a system of medical logic will be ever instituted, must be but very faint; or, at least, the probability of its realization must be assigned to far distant ages. This only exists for the present generation,—to proceed steadily in the true road for the acquisition of knowledge, which we have at length happily discerned. We shall thus have the gratification of employing our talents in a manner the most immediately beneficial to human nature; and we shall at the same time be collecting materials adapted for the construction of an edifice, that would constitute the most glorious and useful work ever executed by man.

Such are our opinions respecting medical logic in the most comprehensive view; but, whilst the study of the science of medicine is parted into the divisions we have enumerated, it may perhaps be allowable to consider the development of the principles of each of those divisions in an isolated state, as well as it can be effected, as the logic of those divisions: and this appears to be the opinion of Sir GILBERT BLANE; for, if the work we are about to take into particular consideration may with propriety be termed "*Elements of Medical Logick*," it can only be so in the partial manner we have just described.

In an analytical report of a work of this kind, the most clear and useful method would be, first, to give a general scope of the author's design, and then to adduce the particular illustration of his principles; but, for reasons which will be hereafter

apparent, we must on this occasion commence with particulars, following the author step by step in his own course.

Sir Gilbert Blane commences the introduction to this work with a definition of medicine: he says,

"As medicine has for its object the preservation and restoration of health, it comes under the definition of an ART,—a term, the import of which consists in the adaptation of means to ends. These means must be derived from the previous knowledge of the changes producible by them, whether as corporeal agents constituting physical causes, or as affections of the mind constituting moral causes."

This we consider to be only a partial view of medicine, using that term in the comprehensive sense in which it is generally received, and in which the author has himself employed it, making it to comprise physiology and pathology, as well as therapeutics. That the two former are objects of science, must, we think, be admitted. To show this, let us consider the case of a man who has a portion of the integuments of the skull separated from that bone by a sharp-cutting instrument, without any forcible concussion of the subjacent parts: some days afterwards symptoms of disorder of the functions of the brain appear; the man soon dies; dissection after death shows signs of a diseased, and perhaps gangrenous, state of the membrane lining the skull internally, corresponding in situation with that portion of it from which the external integuments had been removed. The description of these things constitutes only natural history, and the knowledge of their occurrence cannot properly be termed science (in the received meaning of that term); but, the explanation of the relation of one of these things to the other,—that is, the explanation of the causes of the results, by showing that a due circulation of fluids in a part is necessary for its vitality; that the internal membrane of the skull is chiefly dependant on the external membrane for the supply of those fluids, which is effected by the immediate transmission of vessels through that bone from one surface to the other; and, consequently, that the separation of the external integuments from the skull, by depriving the internal membrane of the fluids necessary for its vitality, must be followed by the death of the latter. This constitutes science, just as certainly as the explaining why, in a right-angled triangle, the square of its hypotheneuse is equal to the square of the two other sides. And, though the object of this knowledge is the application of medicinal agents to the cure of disease, yet the faculty of using those agents with precision cannot be acquired without this kind of knowledge. For example, a person has a disease of the hip-joint, but no uneasiness is felt in the region of that part; the pain is confined to the knee: the practitioner, following the indications of art solely, would here apply his remedy to the

apparent seat of the disease in vain. Science here becomes necessary, as well as art. We think they cannot be separated in a general and comprehensive definition of medicine.

Sir Gilbert Blane next adduces a statement of what he considers to constitute reason: he says,

"The most precise criterion that can be fixed upon for distinguishing rational beings from brutes, is the faculty of adapting means to ends; and there is perhaps no operation to which the term *reason* is so appropriately applicable."

This proposition respecting reason is, we believe, generally acknowledged by philosophers; especially since the principles of it were so well displayed by MALEBRANCHE, who shows, in a very plausible manner, that *the difference between simple perception, judgment, and reason, consists in this,—that, by simple perception, the understanding perceives a thing without relation to any other thing; that, by judgment, it perceives the relations existing between one or more things; and that, in reasoning, it perceives the relations perceived by the judgment:* it is the knowledge of these relations that constitutes the faculty of adapting means to ends. But, the denial of this faculty to brutes, is a point in which many great modern, as well as ancient, philosophers, do not agree with the author. We shall pass over this question, of course, as not relating to medical logic.

The faculty of applying means to ends in the art of medicine, is a sort of knowledge that "has, to some persons of a sceptical turn of mind," the author observes, "appeared so unattainable, as not to be worth prosecuting, and they raise the previous question, *an datur ars medicinæ?*" The author argues in favour of its validity, from the actions of the brute creation, and of savages, when suffering disease: he remarks, that savages but rarely die of old age, though their maladies are fewer, and less essentially severe, than those of cultivated nations; he points out also, as an evidence of the reality of the medical art, the undoubted beneficial control it exerts over many diseases. What, too, would be the use of various plants, except as medicines? he enquires; and, finally, he says, to deny it, is to arraign the benevolence of nature, in subjecting man to the calamities of disease, without providing means for their relief. He concludes the introduction with observing, that it is his intention, "with unfeigned diffidence and humility, to endeavour to point out, in what medical truth consists; what are the difficulties that have obstructed its progress; and what the means of obviating them."

The preliminary observations to the body of the work commence with a remark, that it is the knowledge of the reciprocal relations of cause and effect, and thence the faculty of adapting means to ends, and the just application of such as we can com-

mand, which constitute skill and judgment in the cure of disease, as well as in the other arts of civilized life. "These agencies," Sir Gilbert Blane continues to state, "are ascertained by observation and experiment: by the former we may be said to listen to nature, by the latter to interrogate her." He conceives that there exists a certain relation between the structure of the body and its qualities with the surrounding natural objects and phenomena. "Every reflecting mind," the author says, "must be struck with the admirable correspondence of the structure of the living body as a whole, and of the senses and functions in detail, in relation to external nature; such as the adaption of the whole frame to the laws of gravitation, and of the eye and ear to the properties of light and air."

The author carries this sentiment further: he says there is a similar relation existing between the constitution of the mind and the laws of nature; the most essential attributes of these being the *constancy* of their operation.

"Now," he continues, "the human mind has as evident a relation to this constancy of the laws of nature, as the senses have to their respective elements; for, from the earliest period of life, there is, previous to all experience, a most unbounded confidence in the present and future constancy of events, manifested in all the actions and attainments of practical life. The belief that the sun will continue to rise every morning; that all bodies will continue to gravitate to the earth; that the human beings around us exist, feel, and think, as we do, may be quoted as examples of this untaught knowledge."

If this opinion be correct, the fable of the Sybarites, who blinded themselves in the darkness of the first night, believing their eyes would in future be devoid of use, must be considered an idle invention, instead of being, as the doctrine of some great philosophers would lead us to interpret it, a symbolic illustration of a metaphysical truth.

Sir Gilbert Blane, proceeding in a train of reasoning on the same principles, says,

"But this is not all, nor the most important coincidence of the frame of the mind with the established course of nature. In all the effects produced by the action of external bodies on each other, and on our own bodies, there is a rapid and instinctive connexion established between cause and effect, in virtue of that part of the structure of the mind by which it is made susceptible of habit and association, particularly in early life. So that, not only every organ and function of the body, but every faculty of the mind, is co-relative with, or represents and reflects, as it were, the elements and laws of universal nature."*

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* "See this sentiment more fully illustrated, in a lecture on Muscular Motion, read before the Royal Society, by Gilbert Blane, M.D. page 40. London, 1789. It is also most ingeniously and appositely alluded to, in Madame de Stael's account of the German poetry, in her work entitled *De l'Allemagne*, page 334, vol. i. Paris, 1815."

This doctrine was first advanced by the author in a discourse read to the Speculative Society of Edinburgh, in the year 1771; and, as must be obvious, it is in opposition to that which states custom to be the only source of our ideas of cause and effect. It was against Mr. Hume, the most forcible advocate of that doctrine, that Sir Gilbert Blane especially made this attack. We shall not presume to adduce our opinion on a question that still divides many great metaphysicians; but we must remark, that we think Sir Gilbert Blane, in the following paragraph, rather favours, than controverts, the notions he opposes. He says,

"These confident expectations of the future, could never have been discovered by reasonings *à priori*; inasmuch as we know nothing of the tie which connects cause and effect; *nor can we form any anticipations of future events, but from the past experience of what may be called simple sequence.*"

These speculations must not be considered totally foreign to the proper subject of this work, because, by reasoning directly or analogically from what we have been taught by custom; or, according to the doctrine of Sir Gilbert Blane, by finding that, in imitating the sequences of nature, we can adapt means to ends, so as to bring about certain results; we acquire our first idea of *power*,—the want of accuracy in which, in the forcible expressions of the author, "has given rise to those mischievous errors and inveterate prejudices, those numberless fallacies, those nugatory and superstitious practices, with which the history of the world abounds, and which have proved sources of vice and misery, embittering and deforming human life and conduct."

We shall not pursue this subject further than the author has here done; we think, with him, that some attention to it forms a proper introduction to medical logic: but it is from treatises expressly metaphysical that the knowledge of it must be acquired.

To determine correctly the relations of causes and effects, and from first and real principles to form rational inductions, is, as the author observes, the true object of philosophy. The living body being endowed with such a multitude of properties, and, consequently, its functions being so numerous and so variable under different circumstances, cannot, without extreme difficulty, be submitted to this rational research.

"But," Sir Gilbert continues to observe, "it is incumbent on those who allege that there are obstacles to physiological investigations, seemingly so insurmountable, to specify what they are.

"The author, therefore, submits to the profession the following enumeration of the properties peculiar to animated nature; meaning

under it to describe all the ultimate facts, or primary elements, which form the ground-work of physiological and pathological science.

"These energies may be arranged as follows:

1. The Generative.
2. The Conservative.
3. The Temperative.
4. The Assimilative.
5. The Formative.
6. The Restorative.
7. The Motive.
8. The Sensitive.
9. The Sympathetic.

"This arrangement differs from any with which the author is acquainted, inasmuch as it is not founded on an enumeration of functions and organs, but on elements pervading and belonging to the whole animal system. It is meant to comprehend all the properties in which the essence of life consists, and which characterize and distinguish it from inanimate matter on the one hand, and from a moral and intellectual nature on the other."

Had the author not expressly stated, that the above arrangement of the "primary elements of physiology" was not founded on an enumeration of functions, we could not have considered that he had intended to adduce any thing at all novel. Every system of physiology treats of the generation of the body, of the causes of its temperature, of the assimilation of the food, &c.; but these things are regarded as the results of functions. We have exerted much painful thought in endeavouring to understand the author's precise meaning, and we are not certain that we have discerned it; for his illustrations of his principles rather embarrass than assist us. In the above paragraph, he speaks of certain energies existing in the body, of which we may suppose the functions usually designated by analogous substantive terms are the results: to assist the conception of the reader, we will term them so many *archæi;*—but, on defining them, Sir Gilbert Blane on some occasions gives a substantive definition of the results of functions: thus, he says,

"The Assimilative.—This consists in the chemical changes brought about in the decompositions and combinations effected by the power and processes peculiar to life."

"The Temperative.—By this is meant that steady degree of heat with which all animals are endowed."

And, in another place, after noticing the hypotheses that have been advanced respecting it, he says,

"On weighing the whole evidence, it seems clear, that the heat of the living body is chiefly generated by the vital energies."

Thus, then, the temperat*ive* principle is *heat;* and heat is the result of the play of the vital *energies.* This word, in this place, can only be another term for *functions.*

"The Motive.—By this is meant muscular action, in its most extensive sense."

"The Sensitive.—Sensation, being a simple idea, does not admit of definition, &c."

Others he defines, certainly, as active principles or primary agents: let us take a view of his dissertations upon these. We transcribe the whole of what he advances respecting the first:

"The Generative.—It will not be disputed, that this primary energy of nature belongs purely and peculiarly to animal and vegetable life. Being emphatically named the mystery of nature, and being now admitted, by all correct physiologists, to be inexplicable, it only requires in this place to be barely enunciated. It may not, however, be without use here to hold out as a beacon to those who may still be disposed to waste their time and labour in attempting to overleap the stated boundaries of nature, the fruitless and absurd results they are likely to attain; for, what can be so extravagant and irrational, as that hypothesis which professes to explain generation, by supposing an infinite involution of embryos: *Obscura obscurioribus.* The doctrine of that most respectable physiologist, Dr. Blumenbach, who refers generation and growth to what he calls the *formative nisus*, is perfectly consistent with reason; inasmuch as it is to be considered rather as an exposition of facts than as a theory."*

We shall follow the author's judicious advice, and not waste time in enquiries whether generation should be considered as the result of the play of certain functions of organized bodies, or as the work of an intelligent energy, an *archæus*, within organized bodies, moulding animal matter at its will; particularly as the subject of discussion is *medical logic*, on which nothing doubtful should be advanced,—nothing that is not an exposition of observed facts. Though, we must say, it is somewhat curious that we should be cautioned against enquiries on this subject, since they are likely to lead to absurd results, and immediately afterwards the doctrine of a physiologist designated as perfectly consistent with reason: whether as an exposition of facts or as a theory, does not signify; because, if one man has been able to discern facts respecting it, another may hope to do the same to a greater extent: and what is any knowledge but ideas of facts, or any theory but an exposition of them?

We proceed to the consideration of the author's illustrations of the other energies.

"The Conservative.—By this is meant that power by which the living body is prevented from running into putrefaction. According to the experiments of Dr. Alexander,† the range of temperature most favourable to the putrefaction of dead animal matter, being between

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* "See D. I. F. Blumenbach *de Nisu Formativo*, Göttingen, 1787; and *Abhandlung über die Nutritionskraft*, St. Petersburg, 1780."

† "See *Experimental Enquiry on the Causes of Putrid Diseases*, London, 1771."

86° and 100° Fahrenheit, includes the usual standard of animal heat: there must therefore be some powerful energy in life itself, which counteracts this tendency to spontaneous decomposition."

Reasoning on this must be hypothetical;—it is certainly hypothetical to suppose the existence of an abstract intelligent agent in organized bodies, for the sole purpose of preserving them from putrefaction: but it is a very probable hypothesis which attributes the preservation of living animal bodies from putrefaction, to the affinities between its particles constantly in play whilst its functions are performed. When these cease, those bodies then become subject to the more powerful affinities of the surrounding medium, which are chemical affinities, whilst the particles of the dead body are kept together only by the common gravitation, and the weak cohesion of soft substances.

The author, referring to this opinion, which was that, he says, of Dr. Alexander, and some other physiologists of that day, (and is that of many great physiologists of the present, too, should have been added,) says, "It is quite inadequate to account for this striking phenomenon; and that there is an antiseptic power in life, independant of motion and the change of matter, is proved by the same principle of self-preservation being found in the quiescent state: for instance, in impregnated eggs and torpid animals."

These things afford no support whatever to the author's hypothesis; for it is certain that torpid animals are *not in a quiescent state;* and it is very probable, if abstract reasoning alone can make any thing probable, that the egg is not so. The statement we have made respecting torpid animals, has been satisfactorily proved by the experiments of Professor Mangili, of Padua: he has ascertained that respiration, and of course the circulation of the blood, are slowly carried on. This might have been well supposed; for, if there were no actions going on in them, how is the fat with which they abound before they become torpid absorbed, leaving them comparatively thin and emaciated when they come out of that state?

And, how can the egg be supposed to be in a quiescent state? It contains an organized mass: how can this have been formed without action? How is the chick subsequently developed, without action? It is more rational to suppose that a degree of action, insensible to our eyes, is constantly going on in the living egg, analogous to that by which its organization was developed,* than that it ever totally ceases for a time, and is then resumed. Besides, why is a living egg warmer in a certain

* Malpighi says, the body of the chick is formed in an egg before the incubative heat is applied.

temperature of the atmosphere than a dead one? and why is it not frozen in the same degree of heat? How can the *materia vitæ*, the existence of which the author favours, cause this difference in the living egg, in any other way than by producing *action?* We are at a loss to conceive how an organized mass, in an absolutely quiescent state, can be said to be influenced by any agent. If it is influenced by it, it must be acted on by it, and re-action must ensue. If it is not influenced by it, we must look for other reasons for the phenomena we have alluded to; and no reason can be so satisfactory, considering the subject in an abstract manner, as that there is a series of actions going on; and analogical reasoning from observed physiological facts shows the probability of this opinion; always bearing in mind that an egg is an organized animal body: and, with respect to the want of evidence to the senses of the existence of action, living plants stand in a similar relation to them.

The author adduces some other general arguments, which we consider as still less valid than those we have noticed, in favour of the existence of a *materia vitæ*, the original invention of which doctrine he attributes to John Hunter; and he expresses his surprise that "we meet with works on physiology, some of them even professing to be complete systems, in which this fundamental law of life is not alluded to."

Here we do not comprehend what the author means to signify: terming the existence of a principle, supposing it were not suppositious, a *law* of life, is using language in a manner so different from its common acceptation, that we cannot at all understand it.

We must make some remarks respecting the neglect of this doctrine of the existence of a *materia vitæ*. It is not admitted, either because it is considered that the cause of *life* cannot be regarded in an abstract manner, as distinct from organization; or because the admission of such a principle is, at least, contrary to the mode of philosophizing inculcated by Bacon.

We here pass over the *assimilative* and *temperative* energies, because, as we have already shown, the author defines them, substantively, *heat* and *assimilation*, and states these to be results of the *functions of the* SYSTEM.

"The Formative.—This may be called also the organizing or plastic. It has not usually been stated as a principle distinct from the last, (the *assimilative.*) The slightest reflection, however, must evince that it is quite a separate act of nature, and as different from the assimilative as the construction of an edifice is from the preparation and collection of its materials."

It is by this, the author says, that the processes of growth and repair are effected; and, as a subject for wonder, "with such

harmony on both sides the body, as to produce that correspondence and symmetry which we behold!"

"This is a subject," the author continues, "the nature of which eludes the keenest research, and overwhelms the mind of man with astonishment and despair; from which it can find no refuge, but in resting on it as an ultimate fact, and referring the whole to supreme intelligence."

In the latter sentiment we most cordially concur, but not in the former of those contained in the foregoing paragraph. We have, happily for our mental comfort, ceased to feel despair at not being able to discover the proximate cause of any natural phenomenon; but we know what it is to experience this suffering, and we yet remember it with pain. In early life, before we had studied the works of Bacon, or become acquainted with the disputes of the Academic sect, as may well be supposed, we endeavoured to discover the cause of apparently one of the most simple of natural phenomena,—the passing of a ball from the hand of a person in a direction different from that which it would take when solely influenced by the laws of gravitation. Our books told us that *momentum* was given to it. But what is *momentum*? Is it something material, or is it immaterial? and how can it act on the ball after this has left the hand? We were indeed "overwhelmed with astonishment and despair." The hints these remarks convey may prove useful to some of our younger readers.

Returning to the author's dissertation on the formative energy, we find him remark, in continuation from the paragraph last transcribed, that,

"Should any one attempt to scan it further, by ascending higher in the scale of natural causes, (higher than supreme intelligence?) he will either find himself baffled, or will be in hazard of falling into some extravagance; such as that of Van Helmont, who held that there was in living beings an intelligent principle, which he called Archæus, presiding over, and directing, the secret movements of the animal machine; or of Stahl, who referred it to the rational soul."

We revere Van Helmont; and regret to see his opinions marked with the stigma of blame, without their merits being at the same time designated. His accurate and penetrative views led him to discern that there must be an active and powerful influence, seated about the region of the stomach, distinct from the other chief influences regulating the functions of the system; that is, distinct from the brain and spinal marrow. The functions of the ganglionic system of nerves had not then been determined by experiments; this was not effected until nearly a century after, by James Johnstone: but Van Helmont had in a manner anticipated the discovery; and the making that in-

fluence consist in an intelligent immaterial principle, was, with a few chemical absurdities, as Sir Gilbert Blane indeed observes, the error of his age. Put the ganglionic system of nerves in the place of his *archæus*, and his works must be perused with benefit and delight. We proceed with the transcription of another paragraph:

"The proper function of the formative faculty, is growth and repair. The long and universally received mode of conceiving the progress of growth, was that of a constant accretion of organic matter, giving additional length and breadth to the parts nourished. But it is evident that this would render the preservation of shape utterly incompatible with the enlargement of dimension; and it was first clearly demonstrated by Mr. John Hunter, that the only process by which the growth of solid parts, particularly bones, could be carried on, was by a constant removal and replacement of particles."

Here we must correct a little error in the history of physiological opinions. It may be difficult to determine when the nature of this process was first demonstrated, because analogous notions were advanced by the ancients; but it is certain that it was well developed long before the time of John Hunter. The story of the Dutch advocate, who saved his client from the sentence of the law for having committed murder nine years previously, by bringing distinguished physiologists to state their opinions that the human body was totally renewed in less than seven years, and therefore, as he showed, his client could no longer be the same man, is very ancient. However, this doctrine is fully and accurately displayed by BORDEU; and we particularly notice this, because we can at the same time refer to an author who dwells with much earnestness on some pathological notions, which Sir Gilbert Blane also advances as worthy of consideration: that there seem to be particular outlets for particular species of *effete matter*. Bordeu has perhaps carried this doctrine to excess, in his endeavours to rescue the physiology of the human body from the dominion of the chemists and mechanists, in that curious specimen of fervid discussion, his *Analyse Medicinale du Sang*.

On the *restorative energy*, the author observes, "it is well remarked by Dr. Gregory,* that it carries in itself the means of repairing the injuries and disorders incident to it." The chief illustrations of this which the author adduces, are the phenomena attendant on sleep; several very curious and interesting facts respecting which he adduces; and its agency, as the *vis medicatrix naturæ*.

Whether the phenomena last alluded to depend on an abstract intelligent principle, or are results of the common laws of

* "See *Conspectus Medicinæ Theoretica*, vol. i. p. 5."

the animal economy, is a question likely to be a subject of scholastic disputation for a long period to come. We shall certainly not attempt to discuss it, whilst the works of BOYLE and GLISSON are in existence.

The *motive*, the *sensitive*, and the *sympathetic*, energies, we shall here pass over; because, as we have already observed respecting the two former, the author defines them as results of the functions of the system.

Here we arrive at the termination of the first section of this work; and we repeat, we are by no means certain that we have seized the precise meaning of the author respecting the "ultimate facts, or primary elements, which form the groundwork of physiological and pathological science," not founded on an enumeration of functions. We have some conception that he may intend, by these energies, only to designate phenomena resulting from the exercise of the functions, but which are not themselves the functions: in other words, that these are an analysis of the functions. But then, his express language does not authorize such a supposition; on the contrary, it, with regard to some of them, designates those energies as species of abstract intelligent agents existing in the animal body, each having its peculiar office, and exerting its influence on animal matter in virtue of its will, if it may be so expressed. And, if by these energies it is intended, as we have supposed, to designate an analysis of the functions, then there is nothing whatever of novelty in what the author has adduced, as far as relates to *principles;* though his illustrations of them, regarded in the point of view last alluded to, are often original and ingenious.

No work ever passed our critical examination that we have been so desirous to press on the perusal of our readers, as the one before us. The reason of this must be too obvious to require explanation.

[*To be continued.*]

An Inquiry into the Nature and Properties of the Blood, as existent in Health and Disease. By C. TURNER THACKRAH, M. Roy. Col. Surg. and Lc. Soc. Aph. 8vo. pp. 132. London: Cox and Son. 1819.

Est quodam prodire tenus, si non datur ultra.—HORACE.

THIS work has been produced, the author states in a preface, in consequence of MR. A. COOPER having offered to the gentlemen educated at the school of Guy and St. Thomas, a prize for the best dissertation on the Blood. "I instituted some experiments on the subject," he continues to observe, "and stated the results which my observations afforded. This essay being so fortunate as to obtain the prize, I have been induced to pre-

sent it to the public: and, since the late period at which I heard of Mr. Cooper's proposal prevented the Inquiry's comprehending, in the first instance, some points of importance, I have, during the last year, been endeavouring to supply the deficiency."

We have not often perused a work to which we could give more unqualified approbation. Extensive and sound erudition, great accuracy in all the necessary observations and experiments, comprehensive views, and a particular clearness of exposition, mark the character of the work; and, what is of especial importance, and which renders it interesting beyond the merely physiological relations of the subject, the author has seized every opportunity of making researches tending to the improvement of the practice of medicine; and he has adduced from them several novel and highly-useful observations, which he has illustrated by his judicious remarks.

The circumstances of this being a successful prize-dissertation, and the subject being one respecting which a new and comprehensive treatise was so much required, deduced from researches after facts, uninfluenced by any preconceived hypothesis, will, we feel confident, induce medical practitioners in general to become possessed of the work: we shall therefore pass over in a rapid manner the chief part of it, that we may notice more at length that which is especially applicable to the practice of medicine. An abstract of this may prove a fertile source of reference, on various important occasions.

After some general observations on the origin, character, and uses of the blood, the author notices its most remarkable physical characteristics: and, first, its coagulation on removal from the body, and its change from a homogeneous fluid to the division into the serum and crassamentum. Its proportion to the weight of the body, is next considered. "Keil," the author observes, "estimated it at one hundred pounds; others do not believe it to exceed eight pounds. Haller computes it at ten; Young at forty; and, in Cooper's lectures, its proportion to the solids of the body, is considered as one to sixteen or twenty." Eight or ten pounds, he justly remarks, must be concluded too small a quantity for the supply of the numerous vessels of the body, occupying so extensive a space; and, indeed, it seems to be shown by the quantity lost within a few days, spontaneously or abstracted by art, being frequently greater than that, without the destruction of life.

The question of the vitality of the blood, is next briefly discussed; which the author is disposed to decide in the negative. The arguments he adduces to this effect, are novel and ingenious. The advocates of the affirmative are, we believe, becoming daily less numerous.

On the subject of the chemical qualities of the blood, no original observations are adduced.

The next chapter is on the peculiarities of the blood in different classes of animals. The author first confirms the statement of former physiologists, that there is but little variation of its character in those of the higher orders. The *relative quantity* was found, generally speaking, to be less in birds, fishes, and the weaker animals, than in the larger and more muscular. No uniform disparity was found to exist in the *relative quantities of the serum and crassamentum;* but, the author states, "it appears probable, that a more complete examination would prove the crassamentum to bear a proportion to the strength and ferocity of the animal." With respect to the *periods of coagulation*, "a general inference might be drawn, that coagulation commences sooner in small and weak animals, than in the large and strong." Its *temperature* in the horse, when flowing from a vessel, is 97°; in the ox, 100°—101°; in the sheep, 102°—103°; and in the duck, 107°. This, the author remarks, is conformable to the statement of Braun. No considerable variety exists in its *chemical qualities;* excepting that, according to Berzelius, that of the ox contains a smaller quantity of saline matter, and a larger proportion of azote, than that of man. Its *specific gravity* is nearly uniform. "The *red globules* exist principally in the more perfect animals: in the mammalia and birds, partly in fishes; but not generally in reptiles, insects, and worms. In some creatures, coloured blood is found in the vessels near the heart, while the rest of the body is supplied only with a serous fluid." "Of those creatures which want the red particles, most have *white* globules; but, in the lowest orders, even these cannot be discerned by the microscope." The blood of some animals is found, while circulating, to contain air-bubbles. In the land and sea tortoises, in some fish, in the hedge-hog, and the viper, this appearance has been asserted by respectable writers.—MORGAGNI, Ep. v. 22.

The *coagulation* of the blood is then particularly discussed. On this subject we find some original observations, possessing a considerable degree of interest. The author first notices the effects of chemical agents mingled with it on removal from the body. Medicines, internally administered, had no apparent influence on it. Stupefaction from opium does not affect it. It is induced readily, in proportion to its paucity. Agitation retards it. With respect to temperature, it concretes soonest at from 100°—120°; next at from 40°—50°; and last, and with a greater disparity, in that of from 60° to 90°. And the author thinks it worthy of remark, that the serum is most readily and copiously effused in the higher temperatures; and this, he believes, in regular gradation.

A subject which particularly engaged the author's attention, is *the comparative periods of coagulation, as influenced by the strength or weakness of the vascular action.* From various and repeated experiments, under different circumstances, on the blood of oxen, sheep, horses, dogs, and swine, it appears that the *blood coagulates slowly, in regular proportion to the tonic state, or that condition of the system in which the vital powers are strongest.* It also appeared, that coagulation occurred soonest in *venous* blood.

The *causes of the blood's coagulation* constitute one of the most interesting parts of the enquiry; and it has been investigated by Mr. Thackrah with care and attention proportionate to its importance. We shall only adduce his conclusion respecting them; remarking, at the same time, that his grounds for it appear to be satisfactory, though we are unable to form any rational explanation of this phenomenon. It is "that the vital or nervous influence, is the source of the blood's fluidity; and its loss, the cause of coagulation." But this conclusion, it must be observed, applies to the vessels in which it is contained, not to the fluid itself. Indeed, the series of experiments that led the author to form this conclusion, appear to us to furnish very powerful arguments *against* the doctrine of the vitality of the blood.

The above opinion of Mr. Thackrah, we should remark, is similar to one advanced several years since by Mr. Charles Bell, in his Anatomical Lectures; and was then, we believe, considered to be merely visionary by many of his auditors. But the experiments of Mr. Thackrah seem almost to demonstrate its truth.

We now arrive at the chapter treating of the *changes produced by disease.* After some reflections on the degree of importance and certainty attached to them, the author treats of the *quantity* of the blood. This is a subject on which only probable suppositions can be formed, but they are in favour of its diminution under certain circumstances. The *colour* of the blood is frequently altered in a remarkable manner. Long-continued hæmorrhages render it pale. Sometimes, chiefly observed in robust and muscular men, the venous blood is of a dirty-red colour; and it is also occasionally found to be florid. A darker, or livid, hue of it is stated by authors to have been witnessed in *malignant* fevers. Several instances are related, or referred to, when it has been found so much lowered in *temperature*, as to be cold to the touch; and this without the patient apparently labouring under any severe disease. The relative rapidity of its *coagulation* has been already adverted to, and the cause of it explained.

"*The firmness of the coagulation of blood,*" the author observes, "has been considered a distinctive mark of the tonic state of the system; its greater tenacity, a characteristic of inflammation; and its looseness, a sure proof of debility?" Although these marks cannot wholly be relied on, yet his experiments have shown that they are in general indicative of the states of which they are said to be signs. Much difference in its appearance will arise from the size of the vessels in which it is received. "The fluid of blood received in a bason, is usually in greater proportion than that contained in a small cup; and, of course, the cake in the latter is looser than that of the former." And, as a general practical axiom, he says, "If, on the division of the coagulum, at the expiration of from eight to twenty-four hours, there ensue no considerable effusion of serum, and the crassamentum remain extraordinarily firm, I believe that further depletion is fully warranted." He next adduces the results of the experiments of Dr. Langrish, and the observations of Dr. George Fordyce, respecting the tenacity of the coagulum in different diseases; from which it appears, that in acute maladies it is generally inordinately dense.

"We frequently," the author proceeds to remark, "observe much benefit derived from bleeding, even when the crassamentum is soft and yielding; nor should we, in such cases, hesitate to repeat the depletion, if other circumstances indicate its propriety. Dr. Watt, in his cases of Diabetes, remarks, that great advantage accrued from venesection, though the coagulum was loose and black; and that, on repeated evacuations of blood, the crassamentum became much firmer, and of a more natural hue."

Here, of course, blood-letting produced those changes, by removing the diseased state on which the alteration of the qualities of the blood depended; for such a condition of the blood is not common in diabetes. It is usual to find it present the sizy coat in that disease.

The *proportion of serum and crassamentum*, is next considered. This is usually in a ratio *inverse* to the strength of the system. Two very interesting observations are adduced, which show that the *serum is relatively increased during the continuance of bleeding*, and in a considerable degree in the space of a few minutes. Dr. Weatherhead suggested the following query to the author respecting this circumstance:

"Does not the abundance of serum in the last-drawn cup, arise from the immediate effect of the bleeding, in rousing the energies of nature to absorb serum from the different cavities, and thus occasion the fact you have remarked? If this be the true cause, it will likewise account for the benefit derived from, and authorize, the detraction of blood in both sanguineous and serous extravasations, wherein the

strength has not thereby been materially diminished. This absorption ought also to be more obvious in health, where nature acts unfettered by diseased associations."

The circumstance must, Mr. Thackrah conceives, originate either in the cause Dr. Weatherhead suggests, or in the greater disposition to concretion which the blood assumes, when the system is reduced. "The latter opinion," he continues, "is the least probable; for, if the increased proportion of fluid in the last-received blood, arise merely from the speedy contraction of the crassamentum ejecting a greater quantity of serum than the first-drawn, this substance would be firmer in the last than in the first."

The *mechanists* would readily explain the above phenomenon by the *vacuum* produced in the vessels by the abstraction of blood; whilst the *animists* will perhaps concur in the opinion of Dr. Weatherhead. Others will seize the fact as an important indication for practice, without attempting to form any conclusion respecting its cause.

The author next adduces a statement of the relative quantities of the serum and crassamentum, in various forms and stages of disease; which is consonant with the general account already given.

We now arrive at another very interesting part of the subject,—*the coat of yellowish size, which sometimes covers the surface of the blood.* We cannot extend the limits of this analysis much further; and therefore, to avoid repeated particular remarks, we state, that the whole of the observations and experiments contained in this chapter, tend to show the truth and importance of the opinions of Bordeu, given in the last number of this Journal. We hope to find them become the subject of discussion, and shall therefore at present briefly pass over this part of the enquiry.

Mr. Thackrah satisfactorily shows, that the sizy coat *does not arise from any particular tenuity of the blood*, as stated by Hewson; and this physiologist proved, that *increased gravity of the cruor was not* the cause. And though the author is disposed to infer, that the formation of the buff-coat in inflammatory diseases depends on the blood's indisposition to coagulate, such tardiness of concretion allowing the red particles to subside, yet he acknowledges that an observation of Dr. Whiting militates against this opinion. "He found a fibrous tunic near the *bottom* of the crassamentum in one case, and this phenomenon to be wholly absent in another, though the blood remained fluid from fifteen to thirty minutes." We cannot here pass over one circumstance that we have ourselves almost constantly observed, and in instances of which the works of every writer on inflammatory affections abound; which is, that the buffy coat

is not witnessed in the first or second day of the disease, yet it afterwards appears, even though the severity of the malady has become much alleviated. The observations and experiments of Mr. Thackrah, in regard to this part of the subject, are not quite perfect; since he has not noticed the stage of the disease in which the blood forming the subject of them was drawn.

The author has also been led to doubt the truth of the opinion, attributing the buffy coat to *increased agitation of the blood.*

Mr. Thackrah adduces the following queries respecting it; the analogy of one of which to some opinions we have already noticed will be easily discerned.

"Does the additional quantity of fibrine, acquired by inflammatory blood, remain for some time unassimilated, and thus retard those changes which it is natural for this substance to assume?

"Or, rather, shall we believe that the vital energy is preternaturally excited in active disease, and thus, by its effects on the blood-vessels, protracts the period of coagulation?"

It must not be forgotten, that there is an increase in the relative quantity of the fibrine to the serum, *in the latter stages of most acute diseases;* and, also, that the sizy coat appears in diabetes, when the vital energy is much depressed, and when the blood is not in a state of inordinate tenuity.

We pass over several judicious remarks relative to the application of those facts in the practice of medicine, to the consideration of the *changes produced in the quality of the serum* by disease. On this subject Mr. Thackrah adduces some interesting observations from other authors, but nothing novel of much importance. The same remark will apply to the subject of *depositions from the blood* in disease.

That there is a disposition to *putrescency* of the blood in many diseases, is satisfactorily proved, in spite of the scepticism and objections of those who *absolutely* abandon all considerations of a humoral pathology. This *putrefactive process* Mr. Thackrah believes to be influenced by the state of the system. He says, "It takes place most readily in a debilitated condition. Blood subtracted during inflammation, assumes this change later than blood during weak vascular action." This would lead us to attribute it to the same laws that regulate the coagulation of the blood.

The rapid and partial analytical sketch we have here given of the work of Mr. Thackrah, is produced, as we before observed, rather from a desire that our Journal should comprise some of the valuable matter it contains, than from an attempt to convey, in an abstract, any thing like an appropriate idea of its contents.

The Influence of Civic Life, Sedentary Habits, and Intellectual Refinement, on Human Health and Human Happiness; including an Estimate of the Balance of Enjoyment and Suffering in the different Gradations of Society. By JAMES JOHNSON, Esq. Surgeon to his Royal Highness the Duke of Clarence; Author of the "Influence of Tropical Climates on European Constitutions," of a "Practical Treatise on Derangements of the Liver, Digestive Organs, and Nervous System," and Editor of the "Medico-Chirurgical Journal, or Quarterly Register of Medical and Surgical Science." 8vo. pp. 93. T. and G. Underwood, 1818. With the epigraphs,

Et mores hominum multorum vidit et urbes.—VIRG.

He studied from the life,
And in the original perused mankind.—ARMSTRONG.

IN this discussion on the balance of enjoyment and suffering in the different gradations of society, the author, already so well known and favourably regarded by the profession, has adduced, in a concise form, many interesting and important observations and reflections respecting several of the most severe diseases of the animal economy; especially those of the gastric system, the heart, and the brain.

One of the most marked characteristics of the whole of Dr. Johnson's works, is derived from a view which he has taken of the system, that, if DARWIN be excepted, had until lately been but little attended to by English pathologists. He regards the human body as a system of organs connected together by nervous systems, so that an impression cannot be made on any part without being more or less experienced over the whole; the phenomena consequent on which constitute what are termed sympathetic affections, and these often become the most serious of the diseases offered to our observation. Another thing is, that, under ordinary circumstances, the animal economy possesses a certain and uniform degree of vitality, which cannot be increased in one part without being relatively diminished in another, which always happens in disease, the cure of which, on most occasions, must consequently consist in restoring the due degree of vital action, by stimulants, to the parts that have lost it, when this can be done; or else by inducing counter-irritation in a part where its presence will not be attended with danger, and which, by sympathy, will remove it from more important organs.

Now, although this doctrine is not original with Dr. Johnson, yet he has the merit of having displayed it with accuracy and precision, and of having discovered many of its laws. This is shown in his works on Tropical Climates and on Atmospheric Influence. We find, too, much interesting matter respecting it in the work before us. It would not be possible to give an adequate view of it in an abstract, and the work itself is drawn

up in so concise a manner, as not to admit of an analysis occupying much less space than the original; we shall therefore confine our account of it to two extracts, illustrating, respectively, the two latter points of doctrine to which we have just alluded.

"The ploughman, exposed at all seasons to the inclemencies of the skies, and strenuously exercising his voluntary muscles, might gormandize with safety on alderman's fare. But not so the citizen, however well-trained in the school of Epicurus. His sedentary life, and a host of moral and physical circumstances around him, render it a matter of impossibility that *repletion* shall not succeed even an apparently temperate regimen; and, in reality, this repletion, and the irregular states of plethora which thence result, characterize nine-tenths of the diseases of civilized life, though they assume the garb of debility, and, too often lead to the most erroneous and unsuccessful methods of treatment. Every one, after a full meal, especially of animal food, with all the *et ceteras* of a civic table, must have felt how incapacitated he was for either mental or corporeal exertion. It is a law, indeed, in the economy of the living machine, that, where any one of the three systems above mentioned (the organic, the animal, and the intellectual,) is over-excited, one or both of the other two systems must fall into a state of irregular or deficient action. The heavy meal of animal and other food exemplifies this law: when the digestive organs and circulating vessels are strongly engaged, the muscular and the intellectual systems are indisposed towards the full exercise of their functions, the greater portion of vital energy being then apparently concentrated in the *organic* system, the principal theatre of operations for the time. On the other hand, let the animal system, or voluntary muscles, be thrown into violent or unusual action,—the digestive process is diminished, or even suspended; and the mind is incapable of dwelling intently on any train of thought. Who could solve a mathematical problem immediately after a furious cricket-match? Again: let a man sit down to an intricate calculation, or the investigation of an abstruse literary subject; nay, even to the perusal of an interesting poem, or other effusion of genius; and the appetite will be so withdrawn, that the hour of dinner will be scarcely remembered."

"I have shown, that in civic life, as now constituted, the digestive organs are very generally in a state of *irritation*, from the quantity and quality of our food, drink, &c. The situation of the *nervous system* will hereafter be proved to be similar. To remove these evils, man will not avoid the causes that produced them; the only alternative, then, is recourse to medicine. But almost all medicines are in themselves *irritants;* and more than half the employment of the physician consists in removing one irritation by inducing another. Let us exemplify this remark. A man, after full living, sedentary avocations, and irregular hours, begins to feel loss of appetite, headach, drowsiness, depression of spirits, fickleness of temper, with sense of fullness, and uneasiness on pressure in the right side, &c. There is now engorgement and *irritation* in the liver: what do we do? We give calomel, aloes, and colocynth, which *irritate* the mucous mem-

brane of the digestive organs, stimulate the mouths of the biliary ducts, and cause a flow of bile and various other secretions into the intestines; which secretions are soon carried out of the system entirely. The whole train of symptoms now vanish, like a fog before the sun-beams. But suppose (which indeed is every day done) we had employed a different class of irritants, called tonics, as steel, bitters, &c. which the loss of appetite and other symptoms would *appear* to indicate? Why, the result would be an aggravation, in the end, of all the complaints. Hence, then, we perceive that nothing but the most careful and minute investigation of the *nature and seat* of the morbid irritation, can enable us to apply the *artificial irritation* of medicine, with any prospect of ultimate success. This view of the subject might open the eyes of mankind to the devastation which is daily produced in the digestive organs, by the careless and indiscriminate administration of a farrago of medicines, which, like food and drink, both by their quantities and qualities, keep the whole line of the alimentary canal, and in fact the whole system, in a state of morbid irritability."

A Treatise on the Physiology and Diseases of the Ear; containing a comparative View of its Structure and Functions, and of its various Diseases, arranged according to the Anatomy of the Organ, or as they affect the External, the Intermediate, and the Internal, Ear. By JOHN HARRISON CURTIS, Esq. Aurist to his Royal Highness the Prince Regent, his Royal Highness the Duke of Kent, their Royal Highnesses the Duke and Duchess of Gloucester; Surgeon to the Royal Dispensary for Diseases of the Ear; Lecturer on the Anatomy, Physiology, and Pathology, of the Ear; Fellow of the Medical Society of London, &c. &c. 8vo. pp. 136. Second edition, with considerable additions and improvements. London: Anderson and Chase, 1819.

SOME account of the first edition of this work has already appeared in a former number of this Journal; but, from the extracts there adduced conveying an inappropriate idea of the contents of the present edition, we are disposed, from sentiments of justice towards the author, to notice it again on the present occasion. We shall, in the first place, give a general account of the subjects treated of in it; and then make some remarks on the merit of the practical observations it contains.

Mr. Curtis commences with some reflections on the benefit which has accrued to the medical art, from practitioners devoting their attention exclusively to the diseases of particular organs; and, when this has been done after due study of those of the general system, as is the case with the author, this remark must be acknowledged to be correct. Some observations on the function of hearing in its intellectual relations, and the consequences of the want of this faculty, then follow; and this leads to the consideration of the state of persons in whom it has been

connate, and on the probability that medical means might be employed with success in relieving many cases which have frequently been considered to be irremediable.

After a reference to the different authors who have treated of the anatomy and diseases of the ear, Mr. Curtis gives a description of that organ, with some illustrative observations deduced from comparative anatomy; this is necessarily connected with some physiological remarks, and with a brief account of the the theory of phonics, as connected with its functions. This leads to the consideration of its diseases. On this subject we must receive with particular pleasure any thing calculated to lead to improved modes of treatment, or to remove that apathy and prejudice against resorting to medical assistance, to which the patients of this affliction have so generally given way. This may to a certain extent be well-founded, from a considerable proportion of cases being essentially without the limits over which the medical art exerts its successful influence; but it is certain that many cases are susceptible of relief by judicious treatment: the grateful acknowledgments of the public, and the assistance of the profession, are, we consider, therefore due to those surgeons who devote themselves to this neglected and unattractive subject of pathology. Perhaps the disposition now prevalent to seek for the cause of many local diseases in disorder of remote parts of the system, especially in the gastric organs, has led to the greatest improvement in the treatment of this, as well as in many other analogous affections. This indication is well followed by Mr. Curtis: in all cases of deafness, excepting those of an organic nature expressly local, his attention is directed to the state of the constitution; and many cases of what are vaguely termed *nervous* deafness, of several years' standing, have been perfectly relieved, by a course of calomel, purgatives, &c. assisted by appropriate local applications.

At the same time that we mention, that the author has taken advantage of the observations of those who have preceded him in this branch of practice, we must remark, that he has applied the principles above inculcated in an active and judicious manner; and the results of his experience appear to have been particularly favourable.

Histories of several cases of the different species of disease of the ear are adduced; but they are too concise, and are of no more value to the medical practitioner than general observations. In order that cases of disease may convey useful particular indications, they must be related in a more accurate and comprehensive manner.

CRITICAL ANALYSIS

OF

RECENT PUBLICATIONS, IN THE DIFFERENT BRANCHES OF MEDICINE AND SURGERY;

SELECT MEMOIRS, AND HISTORIES OF CASES;

In the Literature of Foreign Nations.

Πατρίδας ἄρα
Ανδράσιν, ὦ πατραῖς ἄνδρες, ἀγαλλόμεθα.

Discourses on the Elements of Therapeutics and Materia Medica. By NICHOLAS CHAPMAN, M.D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania; President of the Philadelphia Medical Society, &c. &c. 2 vols. 8vo. pp. 377 and 494. James Webster, Philadelphia; and Souter, London. Vol. I. 1817; Vol. II. 1819.

"To communicate what I have tried, and leave the rest to others for farther enquiry, is all my design in publishing these papers."—NEWTON.

THERAPEUTICS, although the branch of medical knowledge the earliest cultivated, and the true object and end of all our researches, is, as a science, the most imperfect and most enveloped with the illusions of error. Methodists, dogmatists, and eclectics, in all ages, however ardently devoted to their respective theories and haughty and authoritative in their schools, have, on coming to the bed-side of the patient, bowed their heads to the empirics, and been content to use their remedies under the guidance of their instructions.

"ANDROMACHUS (says BORDEU) effected a *chef-d'œuvre* necessary to the human species, when he imagined, or when he collected, the materials of the *Theriaca*. He would be overwhelmed with ridicule, were he to come amongst us, and attempt to reply to the theoretical objections that might be made to his composition: he would not be received a bachelor in our schools: but his remedy is every-where resorted to with eagerness. I have for many years seen a bolus of theriaca given every night to all the patients in the hospital at Montpellier, whilst the schools in that metropolis of medicine resounded with invectives against the composition."

These remarks are, to a certain extent, applicable to the whole of the materia medica.

In order fully to expose the cause of this vagrancy of human conduct, it would be necessary to determine why the most fervid speculators in morals as well as in physics, in the midst of the imagined glory about to surround them from the application of their Utopian schemes, are content, when they come amongst us, to conform to social order and to walk in the common train; and why Pyrrho, who doubted of his own existence, should quarrel with his sister about some trivial domestic affairs.

This is one of the chief causes of the little progress of true know-

ledge in therapeutics, and of the facility with which it has been permitted to be encumbered with errors. Another source has existed, even in the conduct of those men of science who have laboured for its improvement and the extension of its bounds. This has been evinced in a want of accuracy in determining the precise relations between causes and effects; and from *post hoc ergo propter hoc,* having been a maxim commonly applied. Even Robert Boyle believed that *amulets* might cure diseases by their physical agency, and reasoned on the manner in which it might be effected.

Another cause why rational knowledge of this subject is so confined, has been the separating the study of the properties and qualities of medicinal substances from that of their effects under the different forms of disease; and especially in neglecting to combine it with pathology.

Therapeutics, and the knowledge of the qualities of the materia medica, are so inseparably connected, that it is impossible to reason on either of them in a distinct point of view; and, without pathology, reasoning on them must be devoid of results worthy of an enlightened age.

After M. Alibert, who has so well developed the sketch drawn by Bichat, Dr. Chapman is the first who has comprehensively treated the subject in the methodic manner to which we have alluded. There wanted but originality in the plan of his work, to give the author a claim to the introduction of a system calculated in an eminent degree to favour the progress of medicine; yet it seems apparent that Dr. Chapman is not, in this respect, an imitator: he has not noticed the labours of those who have preceded him in the same course; and the statement made in the preface to this work, would render it probable that he was not acquainted with them. He was called, unexpectedly, in the year 1813, to teach the materia medica in the university of Pennsylvania, without having studied the subject with that precise and definite view. After having given three courses of lectures, he was transferred to the chair of the institutes and practice of medicine in the same school; and he was then so urgently solicited to publish his Lectures by the students, as to be induced to offer them to the public, and without having had leisure to make any other alteration in them than the revision of a few passages.

The author commences with a brief sketch of the history of the materia medica, which should have been either more perfect or altogether omitted; since he has not noticed, amongst others of less importance, the labours of Geoffroy, Vogel, Fourcroy, Arnemann, and Darwin; nor even those of later authors, whose doctrines are in some respects similar to his own,—as Alibert, Kretschmar, and his compatriot Dr. Bibb; and he has referred to those of several physicians not immediately connected with it. Pröemia of this kind may do for the school, but beyond that they should not extend.

Dr. Chapman then adduces some reflections on "the improvement of the materia medica." These are judicious, but not sufficiently novel to detain us in our progress to the more interesting and valuable matter contained in the body of the work; and, before we can arrive

at that, we have a long and arduous task to perform, in following the author in his course to the promised Latium.

On a subject hitherto so imperfectly explored, at least in a scientific manner, and so deficient in accurate observation as "*the modus operandi of medicines*," speculations extending beyond the boundaries of precise induction, could be with difficulty avoided in an attempt to form a general theory; especially when guided by an enthusiastic spirit, impatient of intervening obstacles, and determined to avert the perplexities of doubt. Thus, we find in this part of the work of Dr. Chapman, an inclination to hypothesis rather than to theoretical reasoning; and a disposition to consider many points as finally determined, which yet remain to be decided by the results of further researches.

These, however, are errors which almost necessarily spring from the circumstances under which the work was formed. An ardent mind possessing a multitude of original conceptions, adapted, if true, to effect a revolution in the doctrine of the subject to which they relate, does not willingly abandon them; especially when they glow with the halo with which genius will envelop even the offspring of error. Much time and reflection are necessary to lead to the resignation of some, and to doubts respecting the validity of others; and this time and opportunity for reflection were not possessed by Dr. Chapman. But he will not, we trust, finally resign his doctrine without further consideration; for, if erroneous, it must, in its application to the art of medicine, prove injurious; and his talents, and his dignity as a professor, may give to it an unlimited authority over the minds of many of the pupils of his school.

"My theory of the operation of medicines," says Dr. Chapman, "is of modern date, and alleges, that they all act by exciting a local impression, which is extended through the medium of sympathy. By many, however, it is still believed that certain articles, at least, enter the circulation, and produce their effects in this way."

This is one of the points on which, it appears to us, the author has made an erroneous, or at least premature, decision: for, that certain substances will, when admitted into the circulation, produce their proper effects, is proved by experiment. The admission of extraneous matters into the circulation, will be hereafter considered. The circumstance we have above stated, is especially shown by the experiments of Mr. Brodie and M. Magendie with some of the vegetable poisons. M. Magendie separated the limb of a dog from its attachment to the rest of the body, except by that of the artery and vein: these vessels were then divided, and afterwards joined by the medium of pieces of quill. Some of the upas antiar poison was then inserted into the paw of this limb; which was followed by the death of the animal, as speedily as if it had been unmutilated,—that is, in about four minutes. This shows that the poison may exert its agency through the medium of the blood. Viewing the subject in another aspect, it appears from the experiments of Mr. Brodie, that, by placing a ligature on the vessels, leaving the nerves at liberty, no apparent influence on the system took place from the introduction of the same poison into the leg

whilst the obstruction to the circulation remained; though, on removing this after an hour, the animal soon began to experience its effects, and died in about twenty minutes. It may here be said, that stopping the circulation in the part destroyed its vitality; and this objection is sufficiently well-founded to prevent any conclusions to be formed from this experiment in opposition to the doctrine of sympathy, when considered abstractedly; but it may be worthy of some consideration, in conjunction with the experiments of M. Magendie.*

But, neither these, nor any other observations or experiments with which we are acquainted, absolutely refute the opinion of Dr. Chapman, that medicines, as ordinarily applied to the intestines and skin, produce the effects we witness, and attribute to them, only by sympathy. Let us, then, examine his arguments in favour of his doctrine.

"To reach the circulation," says Dr. Chapman, "medicines must pass either by the lacteals or lymphatics. Now, it seems more than probable, in either case, their powers would be so neutralized by the preparatory processes of animalization, as to be deprived of all activity."

The latter notion is refuted by the observations made by Sir Everard Home, in his experiments to determine the functions of the spleen. Rhubarb taken into the stomach, imparted to the blood and the urine its peculiar odour and colour; turpentine also, taken internally, gives to the urine its proper odour. We shall hereafter have occasion to recur to this subject.

Dr. Chapman argues in favour of his opinion from the apparent identity of the nature of the chyle, whether obtained from vegetable or animal substances. This is not determined with sufficient precision to admit of his inferences. That the absorbents of the intestinal canal will transmit fluids possessing properties different from those of the chyle, is proved by water being taken up from it; and we have no facts to show that fluids of more stimulating, as well as those of less stimulating, qualities, may not be admitted by those vessels. May not, too, different sets of those vessels,—that is, both lacteals and lymphatics,—spring from the cavity of the intestines?

But Dr. Chapman attributes a *digestive* power to the whole lymphatic system. He says,

"No one, who has carefully attended to the phenomena of the absorbent system, can help admitting, that every section of it is endowed with the power of *digestion* and *assimilation*; and the lymphatics quite as conspicuously as the lacteals. This capacity is given, as a provision of nature, to exclude noxious matters from the circulation.

"The absorbents, in most instances, are fully adequate to this end; and when they are not, the substance penetrates to the first conglobate gland, which takes on inflammation, and arrests its further progress: these organs acting here as centinels, guarding the exterior approaches of the body. That some of the properties of certain articles, as the

* These experiments were related to the *Institute* of France, and the *Royal Society* of London; and are published, respectively, in their *Reports* and *Transactions*.

odour of garlic, and the colouring matter of madder, are displayed in the secretions and excretions, I am not disposed to deny. But it does not hence follow, that these substances entered the circulation in their primitive state. Directly the reverse, indeed, seems to be proven; as neither the one nor the other can be detected in the serum of the blood."

All this is refuted by the observations of Sir Everard Home, on the occasion to which we have already alluded.* To account for the substances above designated, in the *urine*, Dr. Chapman says, when they are "thrown into the secretions or excretions, being removed beyond the sphere of the vital energies, the chemical affinities are sometimes again brought into play, by which these substances are in part, or wholly regenerated." This, in itself, is a strange effort of the imagination to support an hypothesis; but it will not account for the colour and odour of rhubarb in the blood.

"Whether this explanation be received or not," continues the author, "it must at least be acknowledged, that no substance, in its active state, does reach the circulation; since experiments have shown, that a few drops even of the mildest fluid, as milk or mucilage, oil or pus, cannot be injected into the blood-vessels, without occasioning the most fatal consequences."

This statement is contrary to that of some of the most eminent physiologists on this side the Atlantic; and, unless we had a particular account of those experiments to judge from, we know not what importance to attach to them; especially when it was ascertained by Bichât, and has been also proved by other physiologists, that a small quantity of air thrown into the blood-vessels will cause death, apparently from its effects in the brain; and, if much care be not taken in using the common syringe in performing those experiments, an introduction of air into the vessels must take place. In some recent experiments by Dr. Blundell, air, to the quantity of five drachms by measure, was thrown into the femoral vein of a dog, at short intervals, without producing death; but it caused very severe distress, palpitation of the heart, tremors, difficulty of breathing, &c.: the fact that death will commonly ensue from the introduction of a small quantity of air into the circulation, is not invalidated by them.†

Let us proceed in the consideration of the author's arguments. He says,

"Conceding, however, to the humoral pathologists all which their doctrine demands, and still innumerable difficulties remain in the way of its adoption, to account for the operation of medicines. Not to

* See *Philosophical Transactions*, an. 1807.

† On this occasion we cannot refrain from the indulgence of citing one of the most useful reflections of our literary Aristarchus :

"Even a man whose genius qualifies him for great undertakings, must be content to learn at least from books the present state of human knowledge, that he may not ascribe to himself the invention of arts generally known; weary his attention with experiments, of which the event has been long registered; and waste, on attempts which have already succeeded or miscarried, that time which might have been spent with usefulness and honour upon new undertakings."

dwell tediously on this subject, I shall content myself at present with merely mentioning that we are not at all informed by it, why our remedies, after mixing with the blood, should be directed to one organ in preference to another, as mercury to the salivary glands; or how, indeed, they operate at all. Nothing, surely, is less probable than that dead matter, by mere mixture with an insensible fluid like the blood, should produce any effect on a living system. If it be alleged, as it has sometimes been, that the action of medicines, under such circumstances, is on the surface of the blood-vessels, then the doctrine becomes utterly deserted, and we are forced to recur to sympathy, as affording the only explanation."

Some ingenuity is here exerted to render obscure what is really clear and intelligible with the utmost facility. We shall first refer to a fact, which is better than any logical arguments, to show that dead matter mixed with the blood will act on the living system: the experiment of M. Magendie with the upas poison already related proves that. In order to understand the operation of certain medicines on certain organs especially, it is not necessary to suppose that they should be directed to one organ in preference to another. Each medicinal substance has its peculiar quality, which is irritant with respect to the animal economy; and each organ has its peculiar sensibility. These are propositions which, we believe, will be universally admitted. It is, then, a rational induction to suppose that those substances, the properties of which bear a certain relation to certain organs, will affect them; whilst those whose irritating quality is below such a degree of relation, will have no sensible influence on them. Thus, there are many substances which produce sensible effects on every part of the system; and these are generally called *acrid* to the *taste*: their irritating qualities are so great, as to bear a high degree of relation to the sensibility of every organ. There are others which affect only particular parts, and these are generally more or less *insipid*: their irritating qualities are so low, as to bear the relation necessary to produce sensible effects only to certain organs, and, consequently, the parts sympathising with them. This is only a general view of the subject: the particular laws are probably to be sought for in those which cause the parotids to secrete the saliva,—the liver bile, &c.* In the present state of our knowledge, perhaps nothing more than an hypothesis can be formed; but that which is more nearly allied to theory, and is best supported by analogy, should be considered as the most valid. We are however not obliged, by the laws of argument, to prove the converse to the propositions of an adversary, when they are in opposition to the doctrines generally received; though such a demand is at last made by Dr. Chapman. For, after having cited from Mr. Murray the observation, that the effects of many substances are produced in a shorter time after they have been received into the stomach, than they would be were they to act by being absorbed with the chyle into the circulating mass, and therefore act by the " medium

* See the extract from the works of Bordeu in the *Collectanea* of the present Number: it is from that we have deduced the above notions.

of nervous communication," he says, "The principle being thus clearly established in so large a number of instances, which, if necessary, might be still further increased, it appears to me, that it should be admitted as an universal law, unless exceptions to it are very clearly made out and demonstrated." This, in scholastic disputations, would be considered as the signal of a defeat; and Dr. Chapman here begs the question, without having produced any valid arguments to show his claims to it. Because some remote effects of several medicinal substances depend on sympathy, we cannot thence rationally consider that as the absolute law of their agency.

"To multiply causes superfluously," Dr. Chapman says, "is against one of the fundamental rules of philosophizing, and is not less repugnant to the general course of nature, whose means are proverbially distinguished by great simplicity and uniformity." It is this disposition to generalization that has been the origin of the greatest and most numerous errors with which the history of the opinions of men abounds. On the other hand, to contemplate every phenomenon individually, though it may not be attended with a rapid progress in knowledge, will certainly not lead to error. We know nothing of the course of nature but what we witness in its phenomena; and this simplicity and uniformity of them has not been established by philosophers. We must not deviate from the course of induction; if we do, we are more likely to enter one of the numerous paths of error, than the single one of truth.

Let us proceed to the remainder of the author's arguments.

Dr. Chapman says, he can adduce the most decisive evidence, from experiments conducted by himself and Doctors Physick and Seybert, that none of the preparations of mercury, iron, copper, lead; nor the colouring matter of indigo, of madder, or of rhubarb; can be traced even so far as the chyle. This statement is in opposition to the results of accurate observations and well-conducted experiments by several of our best physiologists; and, without a detail of those to which Dr. Chapman alludes, we certainly cannot consider them as controverted. The circumstance of persons taking mercury in considerable quantities having coins, &c. worn about them coated with that metal, is familiar to every medical practitioner, and is a forcible argument against the assertion of Dr. Chapman. We have already referred to evidence of the existence of rhubarb and madder in the serum of the blood.

Dr. Chapman notices the operation of poisons on animals from which the heart has been removed, in support of his doctrine; and we readily admit that it is valid to a certain extent: but this is not a sufficient basis for the foundation of an opinion, that such is the absolute law of the operation of medicines. We cannot, except by sympathy, understand how the application of a drop of prussic acid, or of essential oil of bitter almonds, produces instant death on being applied to the tongue, &c. of many animals. And it seems also necessary to refer to this, to explain the occurrence of salivation from a single application of a dressing of mercurial ointment to a small wound, or from a grain of calomel. These, and many other observations familiar to medical practitioners, must probably be explained by the agency of that law.

The alimentary canal, the surface of the body, and the organ of smell, are designated as the parts "on which remedies, and perhaps the causes of disease, more especially operate;" and the two former are considered to sympathize with the whole of the rest of the economy.

It was long since ascertained, that a great proportion of the materia medica will produce the same effects on the system when applied to the skin, as when taken into the stomach; but it has been supposed that they were carried into the circulation by cutaneous absorption. Dr. Chapman considers that this is rendered doubtful, by some well-conducted experiments; especially those made by M. Seguin and Dr. Rousseau. By cutting off all communication with the lungs, the latter physician found, that, though the surface of the body were bathed with the juice of garlic or the spirit of turpentine, none of the qualities of these fluids could be detected, either in the urine or the serum of the blood. The substances here mentioned are evidently objectionable ones for the decision of this question; and that some vegetable substances may be absorbed from the surface of the body, has been demonstrated.

"Determined, if possible, to put this agitated question to rest, Dr. Rousseau, assisted by his friend Dr. Samuel B. Smith, has subsequently performed a series of experiments; many of which I witnessed," says Dr. Chapman, "and can therefore bear testimony to their accuracy, with every variety of substance, mild and acrid, volatile and fixed, nutritive, medicinal, and poisonous. The result of these extensive researches, is,

"1. That, of all the substances employed, madder and rhubarb are those only which affect the urine; the latter of the two the more readily enters the system. Neither of these articles can be traced in any other of the secretions or excretions, or in the serum of the blood.

"2. That the power of absorption is limited to a very small portion of the surface of the body. The only parts, indeed, which seem to possess it, are the spaces between the middle of the arm and shoulder."

Having shown the incorrectness of some of the other statements of this kind, we may be readily allowed to doubt of the accuracy of those just adduced. The observations in the second paragraph, too, are opposed by the results of analogous experiments made by Dr. Sewell, who found that madder was detected in the urine, after having placed his feet only in a decoction of that substance.

Until, then, the old doctrine, that some medicinal substances act on the system through the medium of the fluids, is refuted, or a more satisfactory one given in its place, we must continue to profess it. Neither of these, we think, has been effected by Dr. Chapman; though we believe the following paragraph describes some important truths, which merit the assiduous attention of the medical practitioner. The doctrine naturally flows from the physiological principles of Bichat.

"Conformably to the theory which I have proposed, whenever a medicinal substance is applied to a susceptible portion of the body, externally or internally, an action is excited, which is extended more or less, according to the diffusibility of the properties of the substance,

or degree of sympathetic connexion which the part may maintain with the body generally. Thus a set of actions is raised, every one of which is precisely similar, provided they are confined to the same system; by which is to be understood, parts of an identity of structure. If, however, the chain runs into other systems, it loses its homogeneous character; the actions being modified by the peculiar organization of the parts in which they may take place. These are principles of universal application. In every case, whether it respects the operation of remedies or the production of disease, the spot primarily acted upon is a point, from which is diffused the radiated impressions."

[*To be continued.*]

An Account of the Structure of the Brain and its Appendages.
By Professor Lauth.

[*Continued from page* 258.]

§ I. The cerebrum. 1°. *The peripherical arrangement.*—This arrangement comprises the hemispheres, the convolutions, and the cavities of the cerebrum, as well as the choroid plexuses.

A. *The hemispheres.*—The cerebrum bears a resemblance, in its external form, to the cavity in which it is contained. Above, it is, like the cap of the cranium, rather uniformly convex; but beneath, or at its base, it presents an unequal surface, modelled on those of the foss which receive it. Its anterior extremity, although not very acute, is yet less obtuse than its posterior. It is divided by the falx of the dura mater in two lateral portions or *hemispheres,* themselves subdivided into three *lobes,* anterior, middle, and posterior. The anterior and posterior lobes are completely separate from above downwards; but the middle, after a deep division, are united in the middle by the corpus-callosum. The anterior and middle lobes are, besides this, distinguished one from the other by a deep groove, termed the *fissure of Sylvius.* The middle and posterior lobes are not so exactly separated; for the furrow that Malacarne* and Vicq-d'Azyr† observed, is not constant. It is for this reason that Haller‡ does not admit in each hemisphere more than two lobes, the one anterior, the other posterior, separated by the fissure of Sylvius. However, as the middle lobe is convex at its base and lodged in a deep fossa, and the posterior being flattened and placed on the tentorium of the cerebellum; and as, besides, the middle lobes are united at a certain depth, whilst the posterior are separate throughout their whole thickness; the division of each hemisphere into three lobes seems to be sufficiently proper. With regard to the term *hemisphere,* it is true, the form of the cerebrum is ovoid, and not spherical; and it is also true, that the base of this organ is not so rounded as its superior surface; yet the name of quadovoid, which might be substituted, not being very exact, it is better to preserve the denomination already received.

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* *Encefalotomia,* P. ii. No. 9.
† *Trait. d'Anat. et de Physiol.* pl. xxv. f. 1, Nos. 4, 5, 6.
‡ *Elementa Physiol.* iv. 15.

B. *The fissures.*—The surface of the cerebrum has on its surface numerous tortuous grooves, which give to it some resemblance to the intestinal convolutions, in the direction of which no regularity has hitherto been discerned.* The pia mater gives out prolongations which enter these grooves, and, tracing their convolutions, is itself continued over both their surfaces. The most considerable amongst these grooves, is the fissure of Sylvius, which separates the anterior lobe, supported on the orbitary vaults, from the middle, lodged in the medial fossa, and of which Reil† has given a description under the name of the *valley*. The superior paries, which this author terms the roof of the valley, appertains to the anterior lobe; and the inferior is derived from the middle lobe. The form of the valley resembles an unequal tunnel in its cavity, surrounded by irregular convolutions.

C. *The lateral ventricles.*—After the external form of the cerebrum, we should examine its internal structure, to which the three openings mentioned in the preceding article will conduct us. But as, to discover it in this way, some preparation, not unattended with difficulty, is necessary, we shall rather arrive at it in the usual manner.

The hemispheres are removed by horizontal slices to the point of union of the middle lobes. To this effect, we part them before they are divided, that this union may be perceived, which is constituted by the *corpus callosum*, of which we shall hereafter speak. We then see that their internal and inferior edges lie at liberty on the corpus callosum, which is consequently larger than the interval of their internal surfaces. In proportion as we proceed in cutting from their surface, the white substance increases in extent; and, when they are removed to a level with the corpus callosum, the base, on which they were placed, represents a white floor, called the *centrum ovale* of Vieussens, divided into two lateral portions by the corpus callosum. If we now make an incision on each side at a little distance from the corpus callosum, we fall on a cavity, which is wholly discovered on breaking down the white substance with the handle of the scalpel, following the direction of that cavity.

The two cavities opened by this preparation, are the *lateral, tricornual*, or *anterior, ventricles*, to which the centrum ovale served as a roof, and which are separated by a septum pierced with a hole, by means of which they communicate. We regard in the ventricles, their flooring, their cavity, and their figure. The flooring is unequal, because of the tubercles that project in it, and which appertain to an arrangement of which we shall hereafter treat. Hardly any cavity exists in the state of health, because the roof is for the most part in contact with the floor, as is the case with the cavities of the mouth, the thorax, the abdomen, &c.; and during life the surfaces are preserved from the effects of friction by a vapour, which after death condenses into drops. Disease sometimes produces an effusion of serum, which renders the cavity more vast in proportion to the greater abundance of the fluid.

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* Is it really true that the cerebral surface of some celebrated men has shown a regularity in the convolutions?

† *Archiv. für die Physiologie*, ix. 195.

Each ventricle has an irregular form, and is divided into three branches or *horns;* one *anterior,* one *posterior,* and one *inferior.*

The anterior horn advances into the anterior lobe, very near to its frontal extremity, curving a little outwardly.

The posterior horn traverses the posterior lobe, sometimes to its extremity. It is at first turned convexly outwards, and ends by curving itself inwardly. We here perceive several grooves, and an eminence* between them, the whole of which has been compared to the paw of a cloven-footed animal, and which has been termed the *spur,*† *claw,* and *hippocampus minor.*‡

The inferior horn, particularly described by Tarin,§ Malacarne,‖ Vicq-d'Azyr,¶ and Wenzel,** is a curved canal, which descends a little backwards, then outwardly, towards the base of the cranium, where it turns immediately inwards, and terminates near the pons Varolii, between the crura cerebri and cerebelli, by an opening, by means of which, as we have already said, the internal surface of the brain is continuous with the external. There runs along the inferior paries of this horn a prominence called the *cornu ammonis,* which appertains to the arrangement of the corpus callosum, and which we shall hereafter describe. The cavity enlarges as it approaches the opening, and forms a sort of enclosure at the inferior portion of the hippocampus. According to Wenzel, this hippocampus communicates in the following manner with the external surface of the brain: The cerebral convolution situate at the middle of the internal edge of the base, takes a direction backwards toward the union of the crura cerebri and cerebelli; a portion of this convolution forms the lobule termed *crotchet* by Vicq-d'Azyr.†† This crotchet unites with another portion of convolution, turns inwards, and communicates with the hippocampus.

D. *The plexus choroides.*—The *choroid plexuses* or *tela choroidinea,* are the vascular network extended on the pia mater, which glides from the surface of the cerebrum into its cavity. Of these, three are enumerated:

The *first* and the *second* penetrate, at the base of the cerebrum, by the opening there remarked, into the inferior horn of the lateral ventricle, the direction of which they follow. When they have arrived at the floor of the ventricle, each of them advances on the optic layer, and is directed towards the opening in the *septum lucidum,* where they meet and unite. Throughout their whole extent they furnish vascular filaments, destined as well for the department of the corpus callosum as for that of the crura cerebri, but of which the greater proportion appertain to the department of the corpus callosum; so that the

* According to Wenzel, (*de Penit. Struct. Cereb.* 145,) this eminence bears a relation to the convolutions of the cerebrum.

† Malacarne, (*Encefalot.* ii. 75.)

‡ Vicq-d'Azyr, pl. vi. xv. No. 42.

§ *Adversaria Anat.* tab. iii.

‖ *Encefalot.* P. ii. No. 82.

¶ *Traite d'Anat. et de Physiol.* pl. xv. xvii. xxii. xxv.

** *De Penit. Struct. Cereb.* p. 136, 141.

†† *Traite d'Anat. et de Physiol.* pl. xvi. 14, 15.

choroid plexuses appear to belong principally to the latter department. These net-works often contain vesicles or hydatids. Wenzel* has described in them a bundle of vessels, containing graniform corpuscles, which he attributes to effused lymph.

The *third* choroid plexus insinuates itself below the posterior extremity of the corpus callosum, and advances along the vault as far as the opening in the septum lucidum, where it unites with the two former. It furnishes numerous branches to the *tubercula quadrigemina* and to the *pineal gland;* but the greater portion go to the corpus callosum.

2°. *Department of the corpus callosum.*—This central department, composed of the corpus callosum itself, of the septum lucidum, of the vault, of its pillars, of the mamillary eminences, of the cornu ammonis, of the posterior and inferior part of the middle lobe, and of the posterior lobe, is perceived when the hemispheres have been removed, and the lateral ventricles discovered.

A. *The corpus callosum.*—This name is given to the medullary band, situate from front to back in the middle of the centrum ovale. The interior edges of the hemispheres of the cerebrum cover its sides, and the falx is suspended on its middle part. The corpus callosum commences anteriorly at the distance of an inch from the frontal bone; and its posterior extremity, larger than the anterior, is about two inches from the occipital. It is about an inch in breadth, and situate lower than the centrum ovale; it is overrun, throughout the whole length of its superior surface, by two medullary cords, called the *longitudinal nerves of Lancisi*, separated by a groove, or *raphé:* this superior surface is also marked by transverse and superficial furrows.

The two extremities of the corpus callosum are differently formed. The anterior, very narrow, and placed between the inferior portions of the anterior lobes of the cerebrum, is turned from above downwards; whence an angle or fold results, which receives the anterior part of the septum lucidum, and terminates in a *beak.* The posterior, larger, forms a transverse *pad*, the inferior surface of which is continuous with that of the vault, and its angles are confounded with the cornua ammonis.

The corpus callosum, entirely composed of white substance, may be divided into two lateral portions. Wenzel asserts that this division may be observed in the fœtus until the age of seven months. It may be discerned also in the adult; for, on careful examination, we perceive the anterior extremity terminate by two beaks; and, on proceeding from this place, we may commence the division of the corpus callosum. Thus, the cerebrum is parted into two hemispheres, and these are united at their bases by means of the corpus callosum; but this union is made by contact, and not by an intertexture of substance.

The incision made to penetrate into the lateral ventricles, serves also to expose the other portion of the department of the corpus callosum. On turning aside the divided edge of the centrum ovale, we

* *De Penit. Struct. Cereb.* p. 91.

discover, first, the inferior surface of this centre, and of the corpus callosum; then the profile of the septum lucidum, of the vault and its pillars, as it is represented by SÖEMMERING,* MEYER,† VICQ-D'AZYR,‡ and GALL.§ When we follow the method of Vicq-d'Azyr,|| and cut the brain by horizontal slices from below upwards, we perceive the same parts in a front view.

B. *The septum lucidum.*—From the middle of the inferior surface of the corpus callosum, and from each of its sides, there descends, in a perpendicular direction, and anteriorly and posteriorly, a thin medullary lamina, which forms a transparent division between the two lateral ventricles. On a side view, this septum resembles a spheric triangle, the anterior side of which answers to the angle or fold of the corpus callosum, the superior to the inferior surface of that body, and the inferior to the floor of the ventricles. This figure depends on the corpus callosum not taking a horizontal direction, being depressed posteriorly, and the floor of the ventricles being elevated anteriorly, where it touches the corpus callosum. We may perceive the transparency of the septum, on carefully separating this small substance.

Between the two laminæ of the septum there is a little space called the *ventricle of the septum,* or the *fifth ventricle of the cerebrum,* which contains a vapour, and often some drops of liquid, which I have seen converted into an icicle. This ventricle varies in respect to size: I have seen it extend all along the superior edge of the septum, from the beak of the corpus callosum to its posterior extremity; and in other cases the laminæ of the septum have been attached so closely, that there existed hardly any vestige of a ventricle. MALACARNE¶ and WENZEL** have observed in its interior a little fossa at each extremity of the septum, and a canal directed from the anterior of those fossæ towards the third ventricle.

The septum lucidum is pierced with a hole, by means of which the three cerebral ventricles communicate. This hole was very early known, since MARCHETTI†† describes it, and it is represented by MONRO.‡‡ It is situate at the inferior edge, and towards the anterior extremity, of the septum; it is nearly two lines in diameter; and it permits the plexus choroides to pass from one ventricle to the other.§§

C. *The vault.*—The vault is formed by two small medullary bands, each of which is attached to the inferior edge of one of the laminæ of the septum lucidum which rest on the convex organs of the floor of the lateral ventricles, and which are curved in the manner of a vault.||||

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* *De Basi Encephali,* tab. iii.
† *Abhandlung vom Gehirne,* Taf. iv.
‡ *Traite d'Anat. et de Physiol.* pl. xxv.
§ *Anat. et Physiol. du Cerveau,* pl. xi.
|| *Trait. d'Anat. et de Phys.* pl. xx. xxiv.
¶ *Encefalotomia,* P. ii. No. 47.
** *De Penitiore Structura Cerebri,* p. 69.
†† *Anatomia,* c. 14, in 16mo. Harderw, 1658.
‡‡ *Observations on the Nervous System,* tab. iii. F.
§§ GALL, however, (*Anat. et Phys. du Cerveau,* i. 296, 514,) has not perceived this hole.
|||| MALACARNE (*Enceful.* P. ii. No. 54,) does not recognize the figure of a vault in the human subject.

It rests on four pillars, two anterior and two posterior: the first descend perpendicularly; the second run backwards, and separate as they descend. From this disposition it arises that the vault is narrow in front and broad behind.

D. *The pillars and mammillary eminences.*—The anterior pillars descend parallel to each other behind the anterior commissure; they become engaged in the inferior substance of the cerebrum,* traverse it, and re-appear at its base, where they terminate in the *mammillary eminences.* The latter are two pisiform tubercles, situate at the base, and before the crura, of the cerebrum: this substance is white, slightly grey internally.

On entering the vault, the anterior pillars lose their cylindrical form; they are flattened, and changed into two bands, which are attached to each other, but always in such a manner that they may be easily separated, as well as the laminæ of the septum and the two lateral portions of the corpus callosum. These bands are prolonged posteriorly, and become united, lying parallel to each other. They afterwards separate, and give origin to the posterior pillars of the vault. From this separation there results a triangular space filled by a medullary lamina, which is also a continuation of the fold of the posterior extremity of the corpus callosum, and which is marked by longitudinal lines, from which this lamina has received the name of the *lyre:* it is covered by the third choroid plexus.

The posterior pillars descend each towards the internal edge of the inferior horn of the lateral ventricle, and terminate there, gradually, about the base of the cerebrum; so that their extremity is a filament so fine, that it is termed the *festooned*, or *fringed, body; the bandelette*, or *tænia hippocampi.*

E. *The cornu ammonis.*—It is thus we call a medullary tuberosity, which descends in the inferior horn of the lateral ventricle, the curvature of which it follows, and which is endued with little tubercular elevations, whence it has received its name. The inferior extremity, where those inequalities are most evident, is termed the *pes leonis* or *hippocampi.* The cornu ammonis is continuous with the posterior extremity of the corpus callosum, to the angle of which it is attached. Its substance is not entirely medullary; for, when it is scraped in its longitudinal direction, it appears that this substance merely forms a thin layer, extended on the grey matter which forms the nucleus of the horn. Now, since, as we have stated in describing the inferior horn of the lateral ventricle, a convolution of the base of the cerebrum communicates with the hippocampus, we perceive that the grey substance of the base of the cerebrum is united with that of the cornu ammonis and rises upwards with it.

Summary.—The organs which we have just passed in review form a system in a great measure independant, and inserted between the other

* Sabatier (*Mem. sur quelques particularités du Cerveau, Anat.* iii. 440), and afterwards Reil (*Archiv. für die Physiol.* xi. 106), found the anterior radicles of the vault in the thalami optici, whence they descend into the mammillary eminences, and thence remount to produce the anterior pillars. We have also observed this communication between the latter and the thalami optici.

departments of the cerebrum. The vault and its posterior pillars are only placed on, and not attached to, the subjacent organs; so that this department is only fixed to the cerebral mass by the anterior pillars.

The cornu ammonis, the inferior portion of the middle lobe of the cerebrum on which it is situate, the posterior horn of the lateral ventricle, and all the posterior lobe of the cerebrum, (when the hemispheres have been removed,) appertain to the department of the corpus callosum.

This we may be assured of by the following dissection: The handle of a scalpel being glided under the posterior extremity of the corpus callosum, presents itself in the inferior horn of the lateral ventricle, below the cornu ammonis and the posterior pillar. If we then push it in the direction of the horn which traverses diagonally from behind towards the middle lobe of the cerebrum, and we tear what remains of this lobe in the direction indicated, we find that we have separated a portion composed of the posterior lobe; the inferior portion of the middle lobe, which contains the cornu ammonis, the vault, and its posterior pillars; the septum lucidum; and lastly, the corpus callosum. But this portion yet being attached by the anterior pillars and by the anterior extremity of the corpus callosum, it will be requisite to cut the pillars at the place where they are engaged in the cerebral mass, and separate the anterior extremity of the corpus callosum at the point of the beaks, and on the two sides of their attachments with the anterior lobes. In this way the entire department of the corpus callosum is detached, and there yet remain of the brain its third and fourth departments.

The department of the corpus callosum, which has now been taken away, is central, as being placed between the peripherical arrangement and that of the crura. It is very complicate, and it has no relation with the nerves, which we shall find arise from the department of the crura. Now, the nerves are the instruments by which we execute all the vital, animal, alimentary, and sexual, functions; but the intellectual functions do not demand their ministry, although they act on the cerebral substance. May, then, the department of the corpus callosum be the instrument or organ in which the intellectual functions have especially their seat? and the peripherical department, which penetrates into the interior of the cerebrum by means of the two openings at its base, and of the third opening situate behind the corpus callosum,—openings by which the choroid plexuses transmit especially to the organs of the corpus callosum their small vessels, so singularly disposed: may all this arrangement bear some relation to the corpus callosum?

[*To be continued.*]

Observations on a Mean for preventing Cancerous Degeneration in Schirrous Congestion in the Breast. By M. le Professeur HALLÉ.

[From the *Nouveau Journal de Médecine*, June 1819.]

THE congestions of which I speak consist in indurations, more or less considerable, comprised in the substance of the breast. Sometimes they form a round and unequal tubercle, extremely hard in its

centre, round which a congestion takes place in the cellular tissue; which congestion is firmer in proportion to its nearer approach to the centres occupied by the primitive congestion. Sometimes these tubercles have been disseminated in a granular form, of the size of hemp-seed, more or less connected and grouped together, but always very hard. The surface of the skin over the seat of the tubercles is a little depressed; the sub-cutaneous tissue appears to be contracted; and the tissue even of the skin at length adheres to the centre of one or more tubercles, and becomes thinner in this place. In this point, not particularly painful on pressure from the finger, lancinating pains are felt, as if the part were pierced by an awl; they return after divers intervals, and gradually become more frequent. Firm and sensible cords often seem to extend from the seat of congestion in the breast towards the axilla, the rest of the breast remaining supple and free.

We cannot doubt, in these cases, what their termination would be sooner or later, if the disease were abandoned to itself.

Having seen many of these tumors, in circumstances which would not permit me to expect from the operation but an ephemeral success, with almost a certainty of relapse, I have resorted to the following mode of treatment:

I had a poultice made of linseed-meal, often mixed with the pulp of carrots, and then moistened with the expressed juice of carrots. The poultice having been prepared and very hot, I added to it a little lard, (half an ounce to a poultice intended to cover the breast,) to render it unctuous, and to prevent it becoming too soon cold, and drying and adhering to the skin. At the instant of its application, I covered the poultice with from half an ounce to an ounce of the powder of hemlock, which was mingled with the surface of the poultice intended to come in contact with the skin.

This poultice was kept applied during six hours in the day; it was then renewed. I had it also applied in the evening, to remain on all night. Sometimes I have it used only at night.

I have very often been content with this linseed-poultice, always moistened with lard, and covered with the cicuta powder.

The lancinating pains have constantly ceased after a few days. The congestion surrounding the hard centre, has disappeared by resolution. The centre has appeared to me to diminish in hardness and extent; sometimes it has seemed to dissipate itself; but it is well known that we must not flatter ourselves with the expectation of entirely resolving the hardness of a part that is disorganized. The progress of the disease has, however, been at least arrested, and its degenerescence, I hope, indefinitely adjourned. I could adduce six very striking examples of this success.

It has occurred to me to be consulted respecting an ulcerated cancer, established on an extensive tumor, adherent, and consequently not at all proper for the operation. The edges of the ulcer formed hard welts, and were the seats of new darting pains, which announced the further extension of ulceration. I had the poultice just described applied. It is certain that the darting pains have ceased, that the hard welts have become soft, and subsided, that the surface of the ulcer

have assumed a better colour, and that the suppuration is no longer ichorous. But, as the cancer was accompanied with deep-seated pains darting into the chest, notwithstanding the amelioration of the external cancer, the internal pains have continued, and perhaps increased. I do not believe that this disease can have a fortunate termination. I have since learned that the internal disease continued its progress.

I can however assert, that, in a pulmonary affection, the progress of which was slow, in which hemoptysis to a great extent was frequently renewed, which had been preceded by the external signs of a cancerous disposition, and which was accompanied by lancinating pains, that seemed to indicate the same disease as the cause of this phthysis, the internal use of the *powder of cicuta* (and not the extract, although prepared in the manner directed by Störck,) has appeared to moderate the pains, and prolong the issue of the malady beyond the period at which it would otherwise have been fatal; that is to say, for several years, and with alleviation.

I have then, in general, advised, both externally and internally, the *powder of cicuta*, in preference to the extract. Internally, I have always given it in progressive doses, commencing from eight to twelve grains, and increasing this dose daily until it produced some degree of vertigo, which has commonly taken place when the dose has been carried to twenty grains: I then diminished the dose two grains; and I continued it in this quantity during from eight to fifteen days, again assuming the increasing progression, and constantly following the same method, to an almost indefinite extent.

I often add *camphor* to the powder of cicuta, to prevent the vertigo, and the narcotic, which are often joined with the other, effects of this remedy.

This method of employing cicuta, both externally and internally, has succeeded with me in chronic and obstinate cases of neuralgia: but the success obtained in the first attacks of these pains, is not always sustained in the recurrences of them.

As I have not regarded the use of cicuta as a new thing, since its advantages had been already stated by some illustrious practitioners, I have only spoken to my colleagues of the method which I have described, in circumstances where its employment appeared to me to be appropriate; seeing nothing remarkable in it, but the extent to which I carried its application; the perseverance I have given to it; the exclusion of other means, except those which accidents sometimes require,—as general or local bleedings; and, lastly, the preference which I gave, whether externally or internally, to the powder over the extract, however prepared; for the doses with which the sensible signs of its action are manifested, marked by vertigo, especially when it is used internally, and by the extinction of pains when applied externally, may thus be easily appreciated, and even calculated, and give to the administration of this remedy a very advantageous means of precision.

This method appears to me to have also the advantage of isolating the peculiar effects of an active, but too often neglected, and even forgotten or despised, remedy, from the want of having been employed in a proper manner.

On the Use of the Ballota Lanata in the Cure of Dropsy. By Dr. REHMANN, Counsellor of State, and Physician to the Emperor of Russia.

[From the *Russiche Sammlung für Naturwissenschaft und Heilkunde.*]

MEDICINE is indebted for a great proportion of its curative measures to popular use. Impressed with this truth, I never disdained in my voyages, and especially in that which I made in Siberia, to direct my attention to what are termed popular remedies. I have collected several; but, as all of them have not been submitted to my own experience, I shall at present confine myself to the praise of one, which may be successfully used in dropsy, as I have myself determined by observation. It is the *ballota lanata,* LIN. (*Puff-ball:—ballota,* cl. viii. ord. vi. § iii. Nat. Sys. JUSSIEU.) This plant, collected when its stalks, leaves, and flowers, are in full vigour, possesses such a diuretic property, that, even though there may be effusion of water in more than one cavity at the same time, the evacuation of it by the urinary passage is effected by it.

I was already convinced, in some degree, of the utility of this excellent remedy, by the statement of a respectable practitioner in Siberia, Dr. Schilling, who assured me that he cured by it all cases of dropsy not dependant on organic lesion; when I had myself an opportunity of employing this medicine.

The first trial I made with it was on a very weak subject, who, within a short time, had been attacked with typhus, then with very obstinate intermittent fever, and lastly with general dropsy. Besides a collection of fluid in the cavity of the peritoneum, there were also evident signs of hydrothorax. All the diuretics,—as squills, digitalis, &c. combined with different tonics, had been administered without success for a long time. The patient was in a state nearly approaching that of death. It was then I had recourse to the *ballota lanata,* of which I directed a decoction to be immediately administered. To excite a favourable re-action, I gave, alternately with this diuretic, thirty drops of sulphuric ether. The excretion of urine began to be increased towards the third day, which continued until all the symptoms of dropsy disappeared. I concluded the treatment, by directing the use of cinchona and some other bitters for a short time. The patient was under my observation for six months; and, although he was affected in the interval with a catarrhal fever, no signs of a recurrence of the dropsy appeared. I have since learned that she enjoys good health. In another case of abdominal dropsy, of about four months' date, I obtained the same effect.

This plant seems only to have failed in its efficacy where there has been induration of some organ or tissue; but it has constantly produced an abundant secretion of urine. The following is the way in which I administered it: Two ounces, grossly powdered, were boiled in two pints of water until this is reduced to half; half an ounce of tincture of canella was added to the strained liquor, or, according to the nature of the case, a drachm of sulphuric ether, or else from fifteen to twenty drops of tincture of opium; and half a teacup-full was taken every two hours.

The diuretic effect generally began to appear from the third to the fifth day. The urine was at first of a whitish-yellow colour, but it gradually became deeper, so that towards the seventh or eighth day it has been very dark and opaque; which seems to prove that the remedy not only has an influence on the quantity, but also on the quality, of the excreted fluid.

I should observe, that I have several times, on employing this plant, found the patient experience painful sensations in the hypochondriac regions, towards the period when the evacuation of the effused fluid was almost wholly effected; from which I have concluded, that the use of the remedy should be discontinued, or at least gradually diminished. I then only gave it in very small doses, and combined with some tonic; or else I continued the administration of it for a short time longer in the form of an infusion, taken night and morning.

Abstract of a Report by Professor DESORMAUX, *on the History of "a Case of spontaneous Cæsarean Operation from Gangrene; by* M. BERTRAND, *Surgeon at Méry-sur-Seine," presented to the Société Medicale of Paris.*

[*Bulletin de la Faculté et de la Société de Médecine de Paris*, 1819, No. iii.]

Abstract of the History.—E. LAURENT, 40 years of age, having arrived within a fortnight of the completion of the ninth month of her eighth pregnancy, used some powerful exertions in loading a cart with manure on the 9th of July, 1811. During this effort, she suddenly experienced very severe uterine pains, accompanied with the escape of some water, and afterwards of blood, from the vagina. The pain and hæmorrhage ceased on the patient being placed in bed. This state of calmness continued until the 15th, when the abdomen became tumefied, painful, and symptoms of the presence of inflammation were developed. No particular hardness or inequality in any part of the abdomen could be discerned. The heat of the vagina and lower part of the uterus, was somewhat different from that of the natural state. Towards the end of the month, symptoms of extreme debility succeeded this inflammatory state, and the patient seemed to be on the verge of death. At last, a red circular spot appeared between the navel and the pubes, which was soon converted into an eschar surrounded by a red circle which separated on the 13th of August, and gave vent to a large quantity of flocculent, puriform, and extremely fetid, fluid; and then to the decomposed body of a fœtus, which appeared to be of the full period.

The severity of the symptoms soon disappeared; the strength of the patient was restored; the wound gradually diminished, and towards the end of September perfectly healed. Menstruation appeared four months afterwards, and has continued regularly ever since. It should be remarked, that, on the escape of the fœtus, M. BERTRAND passed his left hand into the cavity of the uterus, which he could fully explore; and, carrying the fore-finger of the right hand into the vagina, he encountered with it that of the left, which had been directed towards the mouth of the uterus.

Remarks.—M. Bertrand thinks that the infant lost its life at the time when the violent exertion of the mother gave rise to the severe pains and the rupture of the membranes; that it remained in the uterus; and that some projecting part of its body pressing forcibly against some point of the uterus, produced inflammation of that organ, which was communicated to the adjacent parts, and terminated in the eschar comprising the paries of the uterus and the corresponding part of the abdomen.

M. Colin, of Nogent-sur-Seine, who added some notes to the history of the case, adopts this opinion, and endeavours to confirm it by arguments, and by some cases collected from various authors;* and he relates a case communicated to him by M. Haumonté, a surgeon of Bar-sur-Aube, which he considers to have some, though not a very close, relation to it. "A woman, whose pelvis was so far deformed as to render delivery in the natural way impossible, had the Cæsarean operation performed on her by M. Aubertin, with a favourable result: the wound soon healed; and she became suddenly pregnant. Matters went on well until the seventh month, when the cicatrix burst, and the fœtus presented at the wound. M. Haumonté had only to enlarge the opening, and a living infant was extracted without any effort. The woman recovered.

M. Baudlocque mentions, in a brief and general manner, a case having a close analogy to that of Haumonté. He says, "Melivier, senior surgeon of the Hôtel-Dieu at Pontoise, witnessed a case, in 1726, of a woman who could not be delivered of her thirteenth child. Sixteen days after the pains of labour, a large gangrenous ulcer appeared in the abdomen, so as to permit of the extraction of the fœtus, which had remained in the uterus; and the woman rapidly recovered."† He also refers to cases where women, carrying a dead fœtus, have become again pregnant of fœtuses, which have also perished, and which have escaped by abscesses about the navel‡ with the remains of the former fœtus.

Maurice de la Corde, in his Commentaries on the Treatise on the Diseases of Women by Hippocrates, (com. i. art. 9,) relates a case which has some analogy with that of M. Bertrand. "A peasant, in the eighth month of her pregnancy, was kicked by a horse, and thrown against the corner of a large stone, which struck her about the region of the navel. She continued all day deprived of voice, sense, and motion. Two days afterwards she was attacked with very severe febrile symptoms,—as lipothymia, vomitings, and delirium. She was purged several times, bled twice, and cooling drinks, &c. were administered. On the thirtieth day all the violence of the symptoms had diminished, and a tumor, about the size of a fist, appeared near the navel, which opened

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* The *Histoire de l'Académie des Sciences*, an. 1709, p. 22; the *Journal de Chirurgie* of Desault, tome ii.; the *Bibliotheque Medicale* of Planque; Primrose, *De Morbis Mulierum*, p. 316; Albucasis, l. ii. c. 76; Donatus; and the *New-England Medical Journal*.

† *Recueil périodique de la Société de Medecine de Paris*, No. 22.

‡ See the last volume of this Journal, p. 217, for an analogous case, taken from a manuscript by Dr. Clarke, in the library of the British Museum.

spontaneously, and gave exit to a large quantity of pus and sanies, mingled with portions of putrefied flesh; and at length to the bones of a fœtus. After ten months the wound was completely healed, and the woman had recovered her usual health. ROUSSET* and BARTHOLIN† relate cases somewhat similar; but some of these were probably cases of extra-uterine gestation; and none of them decisively prove that the fœtus wholly remained in the uterus, and at length produced inflammation and an eschar of a portion of that organ and of the abdominal parietes, as MM. Bernard and Colin suppose, and M. Baudelocque sustained before them. Professor Desormaux is inclined to believe that rupture of the anterior part of the uterus took place in the woman Laurent, at the time when the violent pains and flow of water and blood from the vagina occurred; and that part of the fœtus passing into the abdominal cavity, caused the peritonitis, the formation of purulent matter, and the eschar of the abdominal parietes; and he also thinks, that the edges of the opening in the uterus having been affected with gangrene, as ordinarily takes place in such cases, the cavity of the uterus and the accidental cavity formed between that organ and the abdominal paries may be formed into one.

Medical and Philosophical Intelligence.

WE feel much gratification in announcing to our readers, that a new edition of the *Memoires et Prix de l'Académie Royale de Chirurgie* of Paris, is now in the course of publication.‡ The value of this collection of dissertations is too generally known and well substantiated, to make any particular comments necessary to show of what importance it is that a new edition should be produced, since the old quarto one has become so scarce and expensive. The editors have contributed much to the value of the present by the addition of notes, pointing out the authors who have since written on the same subjects, and adducing many corollaries possessing considerable interest, which will be found advantageous, especially to students. To this class of our readers we may render some useful advice, in saying that it should form an essential part of their library.

ENTOMOLOGY, besides its interest as a branch of natural history, has many peculiar claims on the attention of the true physiologist,—that is, one who extends his views to the whole of animated nature; and it is also of importance in its relations to various diseases of the human body. A work recently published by Mr. SAMOUELLE§ will much

* *Traité de l'Hystérotomotokie*, p. 125.
† *De Insolitis partûs Humani Viis.*
‡ It will form eight volumes in 8vo.; and is published by *Menard* and *Desenne*, of Paris, and may be obtained in London, of *Mr. Souter.*
§ *The Entomologist's Compendium*, &c. &c. By GEORGE SAMOUELLE, Associate of the Linnean Society of London. 8vo. pp. 496. Price, with coloured figures, 1l. 18s.; plain, 1l. Boys, Ludgate-hill, London; 1819.

facilitate the study of this subject; giving a concise, but accurate and perspicuous, description of the whole of the known genera and species of those of our country, with some useful general observations on their structure, and the mode of collecting and preserving them. We have not often seen the results of so much labour collected into so small a volume. It does great credit to the author's industry and acquirements as a naturalist; and, as far as our approbation may extend, we should feel pleasure in contributing to favour the reward due to his useful exertions.

The first number of the American Journal of Science, edited by Dr. Silliman, contains some observations on the efficacy of *respiration of oxygen gas*, which appear to be interesting. We shall give them to our readers, with the judicious sentiments expressed by the editor.

"It is not extraordinary, when oxygen gas was first discovered, and found to be the principle of life to the whole animal creation, that extravagant expectations should have been formed as to its medicinal application. Disappointment followed of course, and naturally led to a neglect of the subject; and, in fact, for some years, pneumatic medicine has gone into discredit, and public opinion has vibrated to the extreme of incredulity. Partaking in a degree of this feeling, we listened with some reluctance to a very pressing application on this subject during the last summer. A young lady, apparently in the last stages of decline, and supposed to be affected with hydrothorax, was pronounced beyond the reach of ordinary medical aid. As she was in a remote town in Connecticut, where no facilities existed towards the attainment of the object, we felt no confidence that, even if oxygen gas were possessed of any efficacy in such cases, it could actually be applied in this case in such a manner as to do any good. Yielding, however, to the anxious wishes of friends, we furnished drawings for such an apparatus as might be presumed attainable. The gas was directed to be obtained from nitrate of potash, not because it was the best process, but because the substance could be obtained in the place, and because a common fire would serve for its extrication. The gas obtained had, of course, a variable mixture of nitrogen, and probably on an average might not be purer than nearly the reversed proportion of the atmosphere: that is, 70 to 80 per cent. of oxygen to 20 or 30 of nitrogen; and it is worthy of observation, whether this circumstance might not have influenced the result.

"From the first, the difficulty of breathing, and other oppressive affections, were relieved; the young lady grew rapidly better, and in a few weeks entirely recovered her health. A respectable physician, conversant with the case, states, 'that the inhaling of the oxygen gas relieved the difficulty of breathing, increased the operation of diuretics, and has effected her cure. Whether her disease was hydrothorax, or an anasarcous affection of the lungs, is a matter, I believe, not settled.'

"This interesting series of experiments (on the respiration of oxygen gas) ought to be resumed, not with the spirit of quackery or of extravagant expectation, but with the sobriety of philosophical re-

search; and it is more than probable that the nitrous oxide, which is now little more than a subject of merriment and wonder, if properly diluted and discreetly applied, would be productive of valuable effects."

In the Monthly Gazette of Health for the present month, there is the following passage (page 271): "Small-pox continues to prevail throughout the island, and the contagion not being resisted by subjects who have gone through vaccination to the perfect satisfaction of medical men who communicated the disease, instances of failures have in every county so multiplied, that they no longer excite attention. *The demand for cow-pox matter at the National Vaccine Institution has in consequence nearly ceased.*"

Lest these positive assertions should be credited by any one, the Board of the National Vaccine Establishment have authorized us to state, that the number of persons vaccinated during the last eight months, from January to September, at their ordinary stations alone, amount to 5,996; and the number of charges of vaccine lymph, which were distributed to the public during the same period, were 34,597; which is a considerable augmentation, instead of a decrease, of the business of the establishment.

We have the same authority for assuring the profession, that, notwithstanding the strange opposition which is still persevered in, the practice of vaccination steadily gains ground throughout the British dominions.

The following cases of *aberration of the menstrual evacuation in women*, have been published in the Bulletin de la Societé du Départment de l'Eure, and seem to be very important in their application to the opinion respecting the nature of the uterine flux that is becoming most commonly adopted. They are related by Dr. de Reynal.

A girl, aged 15, experienced suddenly, without any precursory signs, her first menstruation, which was abundant, but suppressed after a few hours by a fright. No consequent accident immediately happened; but, at the end of three weeks, a tumor appeared on the right side of the chest, in the situation of the middle of the fifth and sixth ribs. It suppurated and burst: on the following day an oozing of blood took place from the cavity of the abscess, and continued four or five days. From this time a bleeding took place from the same part every month, and the menses never re-appeared. At the age of 23, it was first suspended during the time of pregnancy, which then supervened. The woman has constantly enjoyed good health.

A woman, who had never menstruated regularly, had, at the age of 16, a slight hæmorrhage from the nose, which continued to incommode her for three days, and then disappeared suddenly as it commenced. From that time the bleeding from the nose has been constantly renewed every month, except during the periods of pregnancy; and it did not cease till she was 42 years of age. The woman had been fourteen times pregnant, and enjoyed the most perfect health.

It is stated, in the Nouveau Journal de Medicine (Mai 1819), that *small-pox* has been lately epidemic, and very fatal, at Martinique. The disease was transmitted from the coast of Africa. It did not attack persons who had been vaccinated by medical practitioners, and was particularly prevalent amongst the negroes.

Yellow fever had also reigned there during the whole of the *cold season.* It is remarked, that one person, who had resided many years in the Antillas, and become apparently well-seasoned, having left the island he ordinarily inhabited, died of yellow-fever at Martinique; which, as well as the former observation, is contrary to some opinions entertained respecting the nature of that disease.

M. Thenard has recently announced to the Royal Academy of Sciences of Paris, a chemical discovery which may probably add an useful article to the *materia medica.* On making some attempts to charge water with a proportion of oxygen superior to that which it contains in the ordinary state, he has obtained a liquid which holds in combination 0·88, by weight, of oxygen, which is enormous. This liquid is colourless, almost inodorous: its taste is styptic, and analogous to that of tartar emetic; its density is 1·412. Its action on the skin is very remarkable; it whitens it, causes very sharp pricking sensations, and produces vesications in the same manner as epispastics. When placed in contact with different metals,—as gold, silver, osmium, platinum, iridium, rhodium, palladium, and their oxides: it gives rise instantly to a powerful detonation, with disengagement of heat, and an emission of light, perceptible in an obscured situation. We have not yet received information of the method of forming this compound; but, when we do, it shall be imparted to our readers.

The following gentlemen have obtained the degree of Doctor in Medicine, from the university of Glasgow, within the last twelve months:

Mr. Wm. Hume, from Scotland; Mr. John Banks, from England; Mr. Edward Talbot Kelly, from Ireland; Mr. Andrew Ferguson, from Scotland; Mr. David Macnab, from Scotland; Mr. William Jones, from England; Mr. John Smyth, from Ireland; and Mr. Hans Harper, from Ireland.

Prize Question proposed by the Society of Practical Medicine at Paris.—Persuaded that the present state of science permits us to view in a more favourable light than formerly a point of doctrine which still leaves some uncertainty in therapeutics, the Society of Practical Medicine of Paris has thought proper to call the attention of medical practitioners to the affections of which traces are found in the abdominal viscera, after putrid and ataxic (nervous) fevers. The Society desires that those who engage in the investigation of this subject, will endeavour to determine the character of those affections, and the relations they have with what are termed idiopathic fevers; and especially that they will not deviate from the rational medicine founded by Hippocrates, bequeathed by that divine physician to his true succes-

sors, and preserved by practitioners worthy of that title. The Society consequently proposes, for the subject of a prize, consisting in a gold medal of the value of two hundred francs, which will be awarded at the last sitting in the year 1820, the following question:

Are the affections of which traces are found in the abdominal viscera after putrid or adynamic, and ataxic, fevers; the effects, the cause, or a complication, of those fevers?

The memoirs, written in French or Latin, should be addressed, free of carriage, before the 1st of October, 1820, to M. Giraudy, Perpetual Secretary of the Society, Rue Traversiere-Saint-Honoré, No. 33, à Paris.

The great number of societies which have been formed in different parts of the kingdom within the last thirty or forty years, for the relief of the widows and orphans of medical practitioners, must be a durable, and at the same time very honourable, memorial of the good sense and active benevolence of the members of that profession.

Though the utility of these institutions is indisputable, yet it has, unfortunately, too often happened that widows and orphans are not the only persons connected with this profession who have been the subjects of want and distress, but that practitioners themselves have become, from various causes, exposed to so many difficulties and privations, as to have been equally, if not in a superior degree, objects of commiseration.

We have great pleasure, therefore, in announcing to the medical public, that an institution was founded about three years ago, under the name of the *Medical Benevolent Society*, for the purpose of raising a fund for the relief and assistance of such of its members who may, through want of success in business, or unforeseen misfortunes, be so reduced in their circumstances as to stand in need of pecuniary aid. This society is ready to receive into its number regular practitioners in every branch of the profession throughout England and Wales. The subscription of one guinea at admission, and the same annually, paid in advance, constitutes a member, and entitles him, in case of need, to such advantages as the future state of the fund shall be able to afford. It must surely, then, be considered as a duty incumbent upon every medical man, without any exception, to unite with such an institution. The more opulent, for the benefit of that class of their brethren (which is, alas! too numerous,) whose situation is that of entire dependence upon the uncertainty of professional success; and the latter class, as not knowing but that ill health, infirmity, or old age, may overtake them, before they shall have been able to make provision for a period of life which must, from these causes, be utterly unable to provide for itself.

Though this society is but in its infancy, it consists already of between 200 and 300 members, and is under the especial patronage of his Royal Highness the Duke of Sussex. Dr. John Latham, president of the Royal College of Physicians, presides over it; and its vice-presidents are, Dr. Hull, of Manchester; Henry Cline, Esq. surgeon; and Arthur Tegart, Esq. apothecary to their Royal Highnesses the

Dukes of Clarence and Kent. Among its members will be found the names of Drs. Baillie, Ainslie, and Babington; and Messrs. Abernethy and Astley Cooper, surgeons. At the quarterly meeting of the directors held in September, seven new members were ballotted for and admitted.

In addition to the Benevolent Fund above mentioned, there is, under the same board of managers, another fund, totally distinct from the former, for the purpose of granting annuities of £50. or £100. during the lives of medical subscribers to it, after they shall have attained the age of sixty years. The payments for this purpose are regulated by the age of subscribers at the time of their admission, agreeably to well-known rules of calculation, settled under the direction of an eminent mathematician, and may be made either in one sum, or by annual instalments, at the option of the party insuring. Further particulars, relative to both these funds, may be known by application to the Secretary, Mr. H. C. Field, Surgeon, 95, Newgate-street, London.*

LECTURES ANNOUNCED TO COMMENCE IN OCTOBER.

Conquest (Dr.) on Midwifery.
Curtis (Mr.) on the Anatomy, Physiology, and Pathology, of the Ear.
Davies (Dr. J. B.) on the Diseases and Medical Management of Children and young Persons.
——— (Dr.) on the Practice of Midwifery.
Glasgow College.—Mr. Burns, on Surgery; Dr. Freer, on the Practice of Medicine, and on the Institutions of Medicine; Dr. Graham, on Botany, in May next; Dr. Jeffery, on Anatomy; Dr. Miller, on Materia Medica and Pharmacy; Mr. Towers, on Midwifery; Dr. Thomson, on Chemistry and Chemical Pharmacy.
Ramsbotham (Dr.) on the Practice of Midwifery.
Uwins (Dr.) Introductory Lecture on the Practice of Medicine.

MONTHLY CATALOGUE OF MEDICAL BOOKS.

Some Remarks on an Introductory Lecture delivered before the Royal College of Surgeons, in which an Attack was made on a Teacher of Anatomy in one of the regular Schools of London. By a Member of the College, late a Pupil of the School of Great Windmill-street. 8vo. 2s.

A Treatise on Stricture of the Urethra, containing an Account of improved Methods of Treatment; with an Appendix, noticing the Applications of a new Instrument to the enlarged Prostate Gland, Gleet, Fistula, and other Diseases of the Urethra, Œsophagus, and Rectum. By James Arnott, Surgeon. 8vo. boards, 7s.

A Letter to the Right Hon. Lord Viscount Palmerston, Secretary at War, &c. on the subject of the Ophthalmic Institution, for the Cure of Chelsea Pensioners. By John Vetch, M.D. F.R.S.E. Physician to the Forces, &c. &c. The second Edition, with an additional Appendix, containing the Reports of the Army Medical Board, and of the Medical Officers of Chelsea Hospital. 2s. 6d.

Catalogue of Mr. Charles Bell's Museum of Natural and Morbid Anatomy, in Great Windmill-street. 4to. 2s.

Clinical and Pathological Reports. By Samuel Black, M.D. 8vo. 10s. 6d.

Burgess and Hill's Improved Catalogue of Books in Anatomy, Medicine, &c.

* This notice is inserted here at the request of the Committee of the Society.—Edit.

REPORT OF DISEASES.

UNTIL towards the middle part of the past month, when the wind blowing for some days from the north produced a sudden and extensive change in the temperature of the atmosphere, the season had been unusually healthy. Diarrhœa has been rather frequent, though not in general severe; but cholera has not at any time been very prevalent: neither have dysentery nor gastric fever been of common occurrence. Cholera and diarrhœa were said by SYDENHAM to prevail in autumn, as sure as swallows come in summer; and it is the having escaped the general dispersion of those complaints, that has rendered the present autumn hitherto so peculiarly healthy. A few cases of melæna have occurred; all of them, with two exceptions, in persons habitually affected with disorder of the digestive system. Typhous fever has appeared occasionally, but it has ceased to be so prevalent as to merit the appellation of an epidemic at the present time. Autumnal gastric and intestinal disorders are commonly attributed to the extensive use of fruit as aliment; but the same causes which contribute to render autumnal fruit plentiful, are more probably those which give rise to the disorders to which we allude,—great and long-continued heat and dryness of the atmosphere. This is expressly the case with cholera, the origin of which seems to depend chiefly on affection of the liver sympathetic with the state of the skin. Here we probably witness effects that might be frequently prevented by the habitual use of baths; but we seem to have too much of the disposition dependant on our northern origin left amongst us, to let us yet enjoy this salubrious luxury in a familiar manner. The treatment we have observed to be most generally successful in cholera, has been a mixture of an ounce of sulphate of magnesia with one or two grains of tartar emetic, taken at divided doses in the first twenty-four hours, with the free use of cool diluent drinks. In two instances, where it could be employed conveniently, the use of a bath of from 105° to 110° (Fahrenheit), repeated several times, was employed with prompt and decisive benefit.* Small doses of tartar emetic, with opium and rhubarb, have constituted the remedies subsequently employed.

On the change of the weather to which we have alluded, pulmonic inflammation became rather frequent; and we have seen several old persons, whose lungs were previously diseased, fall victims to it. In one of these cases, affecting a female about 60, it was accompanied with inflamed throat, rapidly running into sloughing ulceration. This is a combination of disease that seems not to have been often witnessed of late years. An extreme state of asperity of the tongue, and small weak pulse, marked the case from the onset. It was also attended with panting respiration, without much pain in the chest, and but occasional fits of coughing. Bleeding was freely resorted to in the first three days, and the blood was cupped and sizy; but it did not produce the slightest temporary alleviation of the disease.

* We were led to the use of this remedy by the recommendation of Colonel FULLARTON, who stated to us that he had seen a hot-bath of much higher temperature than that above designated frequently used in cholera, at Trinidad, with extraordinary advantage. It was there employed so as nearly to produce inflammation of the skin, and the patient kept in it as long and as frequently as could be done without inducing fainting; this, however, was not often produced.

METEOROLOGICAL JOURNAL.

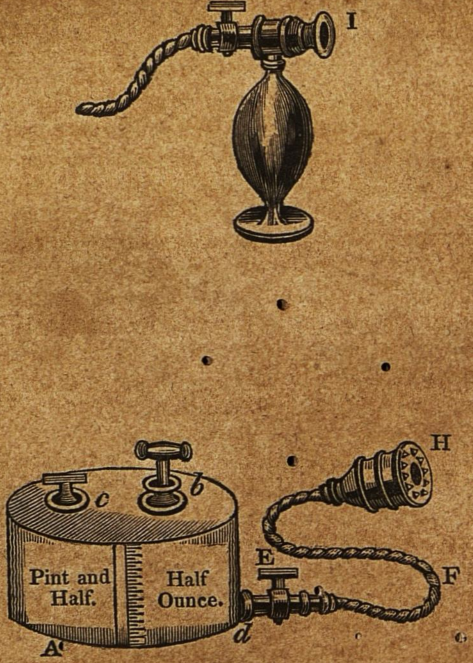
By Messrs. WILLIAM HARRIS and Co. 50, Holborn, London.

From August 20 to September 19, 1819, inclusive.

Day of Month.	Moon.	Rain guage	THERM.			BAROM.		De Luc's HYGROM. Dry	Damp	WIND.		ATMOSPHERIC VARIATION.		
Aug.														
20	●		65	76	61	30·20	30·20	9	10	NE	NE	Cloud.	Fine	
21			65	72	62	30·16	30·14	10	8	NE	NE	Cloud.	Fine	
22			67	73	62	30·15	30·12	9	10	NE	ENE	Cloud.	Fine	
23			68	76	62	30·10	30·10	15	5	NE	NNE	Fine		
24			67	78	61	30·07	30·00	9	3	NNE	SE	Fine		
25			65	77	62	29·97	30·04	8	5	NNE	NE	Fine		
26			67	76	60	30·07	30·10	8	5	NE	NE	Fine		
27			67	74	62	30·06	30·03	6	8	NE	NE	Fine		
28	☾		67	72	62	30·00	29·83	8	8	ENE	SW	Fine	Cloud.	Fine
29			69	72	61	29·72	29·69	9	6	WSW	WSW	Fine		
30		,08	67	70	55	29·46	29·26	9	7	S	W	Fine	Rain	Cloud.
31			61	64	49	29·40	29·45	5	5	W	WSW	Fine	Cloud.	Fine
Sep.														
1			53	58	50	29·58	29·70	5	3	NW	W	Fine		
2			54	63	50	29·75	29·75	7	8	W	WSW	Fine		
3		,07	65	69	56	29·69	29·84	12	11	W	WSW	Cloud.	Fine	Rain
4	○	,05	60	70	62	29·98	29·93	11	10	W	WSW	Cloud.	Fine	Rain
5		,29	62	70	53	29·81	29·93	13	9	WNW	W	Rain	Rain	Fine
6			67	65	51	29·99	30·09	9	10	W	WNW	Fine	Fine	Fine
7			64	68	64	30·08	30·10	13	14	W	W	Fine	Fine	Cloud.
8			68	75	63	30·13	30·16	13	10	W	WNW	Fine		
9			67	71	61	30·16	30·13	12	11	SSW	WSW	Cloud.	Fine	
10			65	70	55	30·12	30·07	12	8	ESE	SE	Fine		
11	☽		60	66	58	30·12	30·18	10	11	E	NE	Cloud.	Fine	
12			63	68	51	30·25	30·30	9	6	ENE	ENE	Fine		
13			58	66	54	30·30	30·28	8	8	NE	SE	Fine		
14			59	64	57	30·25	30·17	10	9	ESE	E	Foggy	Fine	Fine
15		,06	60	72	50	30·00	29·87	11	12	E	SSW	Foggy	Cloud.	Rain
16		,19	50	55	47	29·75	29·35	10	7	NNW	N	Cloud.	Rain	Fine
17			52	60	55	30·00	30·15	9	7	NNE	N	Fine	Fine	Fine
18			60	64	53	30·23	30·20	10	10	NNW	N	Foggy	Fine	Fine
19	●		59	64	46	30·20	30·26	7	5	NE	NE	Fine	Fine	Fine

The quantity of rain fallen in August, is 34-100ths of an inch.

TO SUBSCRIBERS.

The unequivocal testimony we have experienced, that the project of making the periodical History of Medicine form a Supplement to the common series of the Work is generally favoured by our readers, by the numerous expressions of approbation; and the want of a single instance of objection to that measure, has determined us to fulfil our proposal; but it is necessary to state, those who desire to obtain the Supplement, should give directions to that effect to their respective Booksellers, and some time previous to the period of its publication; as it will not be generally distributed with the Journal, unless required.

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